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ENERGY CONSIDERATIONS IN UNITED STATES FOREIGN POLICY

Hendrik S. Houthakker

Of the various ways in which energy enters into American foreign policy, the most important for national security is the heavy dependence of the United States and most of its allies on oil from unreliable sources, particularly from the Middle East. In comparison, other energy-related foreign policy problems, such as the tendency toward proliferation of nuclear weapons and the effects of high oil prices on the international capital markets, have a less immediate significance. The situation with respect to oil of each of various groups of countries will be discussed in turn, with incidental references to other energy matters. The final section, dealing with the United States, will present certain conclusions concerning our foreign policy.[1]

OPEC: Economic Aspects

On an average day in 1979 some 20 million barrels of oil passed through the Strait of Hormuz on their way to the industrial countries, whose total consumption was about 40 million barrels per day. Nearly all of the Persian Gulf oil, and most of the exports from other areas, came from OPEC members. The policies of OPEC are therefore a suitable starting point for this discussion.

The Organization of Petroleum Exporting Countries, founded in

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The author is the Henry Lee Professor of Economics at Harvard University, Cambridge, Massachusetts 02138.

[1]Many of the problems taken up here are discussed more extensively in a recent book edited by David A. Deese and Joseph S. Nye (*Energy and Security* [Cambridge, Mass.: Ballinger Publishing Co., 1981]), which became available when the present paper was nearly finished in draft. The author is grateful to Professor Nye for valuable comments on an earlier version.

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1960, started to dominate the world energy situation during the early 1970s. It had been formed to protect its members against the consequences of a fall in the price of crude, the result of massive discoveries by the major oil companies in the Middle East and elsewhere. When the world oil market gradually turned in favor of the sellers, the organization became more ambitious. This change resulted primarily from general economic growth in the importing countries and their increased demand for oil and was reinforced by the substitution of oil for coal (particularly in the generation of electricity).

In 1971 OPEC gained an easy victory when the international oil companies agreed to a general increase in the price of crude, the first of any size in many years. The companies also accepted greater control by the producing countries over the rate of extraction, in effect giving up the leadership they had exercised in the world oil market since the beginning of the century. Although some of the major companies, especially the four partners in the Arabian American Oil Company (Aramco), retained certain advantages, Western influence on petroleum policies in the Middle East came to an end.

OPEC's greatest success started in late 1973, when spot prices rose sharply as a result of the panic buying that followed an Arab embargo of the United States and the Netherlands. Whether or not the embargo itself (which was ineffectual from a political point of view) was intended to bring about this price increase, the effect was the same, namely a quadrupling of crude prices. By keeping oil exports under control, OPEC was able to exploit the market power that had emerged when the United States started to compete with Europe and Japan for oil from the Middle East and Africa.[2]

The success of the oil cartel was significantly aided by the reaction of consuming countries. In response to the embargo, the International Energy Agency was set up to formalize already existing agreements concerning the sharing of oil supplies in an emergency. Diplomatic efforts were made to reach some kind of understanding with OPEC in the framework of the so-called North-South dialogue, to be discussed later. Many European countries attempted to develop closer political ties with the Arab world, moving closer to recognition of the Palestine Liberation Organization in the process. None of this, it is fair to say, had any discernible effect on OPEC's policies, which were aimed primarily at economic goals.

[2]Until 1970 U.S. oil imports were relatively small and came mostly from Venezuela and Canada. Afterward domestic production fell sharply, while consumption was maintained at a relatively high level through price controls.

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These diplomatic approaches were irrelevant, but at least they did no great harm. More serious was the refusal by the United States and Canada to recognize that the world price had changed. Politicians in both countries declared heroically but fatuously that the price of oil was going to be set by them, not by some foreign cartel. Since they set the price with a view to the short-term interests of consumers, it was too low to encourage conservation and domestic production. The volume of U.S. oil imports more than doubled during the middle 1970s, while Canada managed to become a net importer after having been a sizable net exporter for several years. There was greater realism in Europe and Japan, where not only the cartel price was passed on to consumers, but where excise taxes on oil were raised in addition. However, no credible common policy against OPEC emerged.

Even so, the world oil market became gradually weaker after a few years as high oil prices and a worldwide economic slowdown restrained consumption in Europe and Japan. Before these market forces could bring OPEC down, however, the Iranian revolution of late 1978 virtually eliminated the second largest exporter from the world market, thus setting the stage for another large price increase in 1979. Renewed weakness in the world oil market became apparent in 1980, but it was again cut short, this time when the war with Iran removed Iraq (by then the second largest producer in OPEC) as a major exporter. At the time of this writing (January 1981), these hostilities had had little or no effect on crude prices because the importing countries held large inventories in anticipation of further price rises; moreover, the price increase of 1979 and general economic weakness held down the current demand for oil products. As a result the spot price fell, even though the conflict between Iran and Iraq continued. The repeal of oil price controls by the United States in early 1981 no doubt also helped to restore balance in the world market.

OPEC's demonstration of power during the mid-1970s had serious repercussions in the world economy but did not initially destabilize the Middle East politically. The first sign of instability was the Iranian revolution, directed mostly against the shah's policy of rapid modernization financed by large oil revenues; it was at least an indirect result of aggressive pricing by OPEC. The subsequent war between Iran and Iraq, while not attributable to differences over oil policy, is symptomatic of the mischief that affluence permits: Without their accumulated oil profits, the combatants could hardly afford a prolonged military confrontation. The mutual destruction of petroleum installations, which recognizes this pre-

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condition, is also the most worrisome feature of the conflict for third parties. Doubts have also arisen about the permanence of other regimes in the Persian Gulf.

The cartel has been able to overcome these political disturbances because it is not very tightly organized; even in its heyday it relied more on informal understandings than on explicit agreements. Between 1971 and 1978 the cartel members were usually in agreement on the world price, but no formal mechanism for allocating output was ever adopted. The 1979 price rise was of course very much to the short-term benefit of the oil exporters, but it appears to have been as much a surprise to them as to anybody else. Since early 1979 the world price has in effect been determined on the Rotterdam spot market rather than by OPEC.[3] This does not mean that OPEC has lost control of the world oil market, but it does indicate that there are limits to OPEC power. The fall in OPEC's share of noncommunist world oil output from 65 percent in 1973 to below 60 percent in 1980 points in the same direction.

It can be maintained, in fact, that the main effect of OPEC is not so much on current production as on exploration. When the major oil companies had a free hand, they discovered enormous reserves, most of which are no longer under their control. Under present arrangements the incentive for exploration by these companies in most OPEC countries is severely reduced, and they have shifted their efforts to non-OPEC areas such as the North Sea and North America. Since the latter areas have less oil potential than the OPEC countries, the efficiency of the world oil industry has been adversely affected by the cartel.

As is true of most cartels, the members of OPEC have divergent interests. Some, particularly Indonesia and to a lesser extent Nigeria, have not let their OPEC membership influence their production decisions at all; these populous countries, which are not solely dependent on oil exports, are producing at or close to capacity and pushing ahead with exploration. Among the more committed members, only Kuwait has deliberately kept its production well below capacity, apparently preferring oil in the ground to investments in other areas. Since the fall of the shah, Iran has also produced at a very low rate.

[3]William Nordhaus, in "Oil and Economic Performance in Industrial Countries," *Brookings Papers on Economic Activity 2* (Washington, D.C.: Brookings Institution, 1980), pp. 341–99, has argued that this was also the case in 1973–74. If so, the achievement of OPEC was to prevent the world price from falling after 1974, which meant counteracting the effect of normal market forces by encouraging its members to restrict supply.

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On the other hand, Saudi Arabia has sought to assert its leadership by actual or threatened increases in production; its share of OPEC output rose from less than a quarter in 1973 to over a third in 1979. Although less vocal on the subject, Iraq (until the recent hostilities with Iran) has also tended toward increasing output over time, raising its share from 6 percent in 1973 to 11 percent in 1979. While Algeria and Libya have consistently pressed for higher prices, they have rarely been prepared to back up this demand by commensurate output reductions. Among the remaining members, Venezuela and the United Arab Emirates have customarily acted as peacemakers within the cartel without attempting to pursue policies of their own.

These divergencies within the cartel can be explained by differences in economic circumstances. Saudi Arabia has vast reserves and would probably have little difficulty in increasing these reserves by further exploration. If it does not price itself out of the world market, it can confidently expect to be a major oil exporter well into the twenty-first century, but the qualification just stated compels it to take a longer view than members with more limited prospects. The position of Iraq and of the United Arab Emirates is similar to that of Saudi Arabia.

The majority of OPEC members, on the other hand, do not believe their oil reserves are large enough for continued dependence on that commodity. They want to diversify into other industries, for which purpose large investments are required; in fact, some of them have run current account deficits even with high oil prices. Their main concern, consequently, is for immediate revenues rather than for the long-term future of oil as an energy source. These members tend to argue for higher prices than the more farsighted exporters consider prudent.[4]

The fact that Saudi Arabia has often worked toward moderation in pricing does not mean that it is less interested in the maintenance of OPEC's market power than the smaller producers. On the contrary, Saudi Arabia has consistently attempted to dissuade importing countries from holding large inventories, which would provide them with some flexibility in responding to further increases in the cartel price and which would also reduce the effects of any future embargo. It is due in large part to pressure from Saudi Arabia that the United States has fallen far behind in filling the Strategic Petro-

[4]In any case, it is not unusual for the larger producers in an industry to charge less than the traffic would bear in the short run. Thus for many years the world's leading copper companies kept their price below the free-market level. The reason they gave was fear of inroads by aluminum.

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leum Reserve, which at last report contained less than 120 million barrels (about three weeks' imports at the current rate). As mentioned already, the initial impact of the war between Iran and Iraq on the price of oil was relatively modest because of the large stocks held in consuming countries, but Saudi Arabia has made a temporary increase in its production contingent on a reduction in these stocks. The International Energy Agency (IEA), already mentioned, has cautioned its members not to buy in the spot oil market, thus in effect yielding to the Saudi desire for a drawdown of inventories.

Whether this IEA recommendation is wise depends mostly on the duration of the Iran-Iraq war. If it is over soon, IEA may well be proved right. If it lasts a long time—and at the time of writing no settlement is in sight—it leaves the industrial countries defenseless against the large price increase that would be inevitable if their oil stocks were to run out. Although Saudi Arabia has increased its production somewhat (by less than 1 million barrels per day), this increase offsets only a fraction of the 4 million barrels per day exported by Iraq and Iran prior to the war. Even in conjunction with its usual OPEC allies, Saudi Arabia could hardly raise output sufficiently to equilibrate oil supply and demand at anything like prevailing prices if the world economy were to resume its normal growth. On balance the oil-importing countries would be better advised to hold on to their inventories and to buy more in the spot market while the war lasts.[5] There are indications that, despite the IEA policy, this is just what they have been doing.

In the longer run (say for the balance of the twentieth century), OPEC, barring major political upheavals, will probably survive despite recurrent dissension within its ranks. The cartel's market share is not likely to fall much below the 1980 level, but recent price developments suggest that it will become more difficult to raise the price in real terms. In other words, OPEC may at last have found the point of maximum revenue. As time goes on OPEC may get support from unexpected sources such as the United States, Canada, and Britain. These countries are developing new energy supplies, some of which, particularly synthetic fuels and oil from offshore wells in deep or Arctic waters, will be very costly. Once the new facilities are in place, a fall in the price of crude would be

[5]The spot market is sometimes considered misleading on the ground that such a small part of current oil flows are traded there (the remainder being governed by long-term contracts). This argument is fallacious: In a free market the price is always set by marginal quantities. Recent French proposals to suppress the spot market altogether are tantamount to trying to cure a fever by throwing away the thermometer.

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inconvenient, to say the least. Of course, these countries could protect their high-cost domestic industries by tariffs, but proposals to this effect have been poorly received so far.[6] The need to invest in expensive alternative energy sources is one of the main burdens imposed by OPEC on the rest of the world.

OPEC: Political Aspects

The preceding discussion of OPEC has focused on its economic aspects because OPEC is first of all a commodity cartel. OPEC also has political aspects, however, to which we now turn. Perhaps the most important of these is OPEC's close involvement with the Third World. The relations between OPEC and other developing countries will be explored further in the section dealing with the non-OPEC LDCs.

A second political aspect has to do with the predominance of Arab countries in OPEC. In fact, there is a separate organization of Arab petroleum-exporting countries (OAPEC).[7] It was OAPEC rather than OPEC that proclaimed the embargo of the United States and the Netherlands during the Arab-Israeli war of 1973. Unlike OPEC, OAPEC is an organization claiming to pursue definite political goals, in particular a favorable settlement of the continuing conflict between Israel, its Arab neighbors, and the Palestinian refugees.[8] This common objective, however, has not prevented the members from taking opposite sides in the conflict between Iran and Iraq. Although the non-Arab members of OPEC have generally supported OAPEC on the Palestinian question, its substantive importance appears to be smaller than the usual rhetoric would suggest. The "Arab oil weapon" exists, but OAPEC has so far made no effective use of it because economic considerations have had priority, as they are likely to have in the future.

[6]The effects of a tariff on the world oil market were estimated in Hendrik S. Houthakker, *The World Price of Oil: A Medium-Term Analysis* (Washington, D.C.: American Enterprise Institute for Public Policy Research, 1976).

[7]The membership of OAPEC does not fully coincide with the Arab members of OPEC, but for our purposes the differences are not important. The largest non-OPEC producer in OAPEC was Egypt until its membership was suspended following the Camp David accord. Egypt's break with the other Arab countries resulted from the political failure of the 1973 embargo.

[8]Although the members of OAPEC would no doubt shed few tears at the complete disappearance of Israel, most of them appear to be resigned to its continued existence. It is not even clear that all of them favor an independent Palestinian state as opposed to the so-called Jordanian solution. The prospects for a settlement of the Palestinian question are so remote that the Arab oil exporters have had little need for precision concerning the details of an eventual solution.

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A more important political concern of the OPEC countries, especially of those around the Persian Gulf, results from the great value of their petroleum reserves in conjunction with the small size of their populations. There is no need to be precise, but at present oil prices the value of these reserves runs into the trillions of dollars; by comparison, the total tangible wealth of the United States is probably around seven trillion dollars. This vast wealth, which dwarfs even the value of the investments accumulated from past oil sales, is a standing temptation to both internal and external enemies of the regimes presently in power. The gulf reserves are so valuable because they constitute more than half of the total proved reserves of conventional oil in the world.[9] By the same token, access to Persian Gulf oil is of the greatest importance to oil-importing countries, particularly the older industrialized countries. Once more forsaking precision, it is safe to say that a complete denial of Persian Gulf oil would cause a short-term reduction in the GNP of industrial countries comparable to the impact of the Great Depression of the 1930s.[10]

If the owners of these valuable resources were in a position to defend them, the world could be less concerned about their security. As it is, the armed forces of these small countries may be large enough for internecine warfare such as the Iraq-Iran conflict, but not for protection against outside enemies or even against the kind of popular revolt that overthrew the shah. Providing the regimes in question with sophisticated weapons may be good for the oil importers' balance of payments, but it does not necessarily do much for security, especially as the weapons may fall into the wrong hands.

The proclamation of the Carter doctrine following the Soviet occupation of Afghanistan demonstrated a recognition of the importance of the Persian Gulf, which is not covered by NATO, to the security of the United States and its allies. While the Carter doctrine is particularly aimed at Soviet encroachment in the area, it is not difficult to think of other dangers with equally serious consequences; one of these would be an Iranian-style revolution in Saudi Arabia. The Soviet Union, in fact, would no doubt be constrained

[9]Conventional oil is oil that flows naturally to the surface or can be extracted by pumping. If unconventional oils, such as those occurring in tar sands in Canada, in oil shale in the United States, or in the form of heavy oil in Venezuela and Siberia, are included, the share of the Persian Gulf is much smaller. At present prices, a large part of these unconventional oils will be competitive with conventional resources once the necessary facilities have been constructed.

[10]For a summary of estimates, see Deese and Nye, *Energy and Security*, p. 4.

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by a realization that major intervention in this area could lead to a third world war, but domestic insurgents would not be swayed by such considerations.

The implementation of the Carter doctrine presents serious difficulties. After the taking of the American hostages by Iran, the United States dispatched considerable naval forces, including two large aircraft carriers, to the area. Since no local bases are available, the maintenance of these forces is difficult and expensive. Moreover, it is not clear that naval forces would be sufficient to defend the importing countries' access to oil. The United States has also organized a Rapid Deployment Force that could be transported by air in an emergency, but there, too, the lack of local facilities is an obstacle, the more so because the insecurity of the Persian Gulf region is not likely to diminish during the next several years. At present the nearest American base of any size is being developed on the British-controlled island of Diego Garcia in the southern Indian Ocean, too distant to be useful for tactical operations.

Recognizing the urgent need for ground facilities, the Carter administration opened negotiations with a number of countries, particularly Oman, Somalia, and Kenya. It appears that these negotiations have been successful, but no details of the results have been made public. Obviously Oman, which controls one side of the Strait of Hormuz, occupies a strategic location; it also borders on South Yemen, the principal Soviet foothold in the region. For many years the sultans of Oman were supported by Britain and by the shah of Iran in their fight against a regional rebellion in the province of Dhofar. This rebellion was brought under control, but Britain and the shah are no longer in the picture and the sultan is in need of other allies. Although a sizable oil producer, Oman is not a member of OPEC or of OAPEC. From the military point of view, the principal assets of Oman are Masirah Island on the south coast, formerly used as a British air base, and one or two ports near the Strait of Hormuz.

While American bases in Oman (and also in Somalia and Kenya) could ease the logistical problems of maintaining a military capability in the Persian Gulf area, they would probably not be enough.[11] Any facilities available there would apparently not be suitable as a staging area for the Rapid Deployment Force. The problem throughout the Persian Gulf region is that several of the

[11] Access to the French naval base at Djibouti would also be advantageous, but is prevented by French insistence on an independent posture. While the United States does have naval rights in Bahrein, the government there does not allow use sufficient for the purpose we are discussing.

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regimes are well aware of the need for American support, but do not want it to be too visible. The most logical solution to the region's security problems would be an American base in Saudi Arabia or Kuwait, but that appears to be out of the question because the rulers of these countries fear internal opposition.

Alternative locations for ground facilities in the region must therefore be explored. The most frequently mentioned possibility is the large air bases built by Israel in a part of the Sinai desert that is scheduled to be turned over to Egypt in the spring of 1982. The main problem there is under what conditions Egypt will permit these bases to be used. It can be argued that American access to these bases would also benefit the security of Egypt, but that is not necessarily a decisive consideration.

Another possibility would be the construction of an artificial island in or near the Persian Gulf, whose waters are generally shallow. Such a base should at a minimum be able to accommodate a few hundred carrier-type aircraft and helicopters, but could also be used as a supply base for naval vessels and for the storage of other material. Experience in the Gulf of Mexico and the North Sea suggests that an artificial island in shallow waters could be built at moderate cost, and operating it should be cheaper than operating an equivalent capacity in aircraft carriers and supporting vessels; moreover, the stationing of carriers in this region has depleted naval forces in the Pacific and the Mediterranean. The main problem might be to find a place outside the territorial waters of a non-cooperative country.

To anyone who believes in the primacy of the private sector in economic matters, it is distasteful to contemplate the possibility of military action. We must ask whether it is inevitable, and whether there are alternatives to the involvement of U.S. forces. As to the first question, the military vacuum in the Persian Gulf left by the departure of the shah will be filled somehow, quite possibly by elements hostile to the West. The industrial countries are too dependent on the area to ignore this danger, which has been brought home by developments in Iran, Afghanistan, and Saudi Arabia during the last year or two.

That much being admitted, why must the United States once more bear the bulk of the responsibility, considering that most of our allies in Europe and Japan rely much more heavily on Middle East oil? One answer is in the oil-sharing agreements embodied in the International Energy Agency; even though other members currently get more of their oil from the area, in the event of a supply interruption the shortfall would be largely equalized (as it was in

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1973–74). It is true that the IEA formula remains untested and that the U.S. government might find it hard to secure public acceptance of the implied cutbacks in domestic oil consumption, but our foreign policy must assume adherence to treaties. Even if there were no IEA, we could not overlook the possibility that if the Persian Gulf were to fall under hostile domination, our allies would be tempted or forced to bargain for oil supplies with the powers that be, thereby weakening NATO and endangering other concerns of U.S. policy such as the survival of Israel. Finally, the United States is the only country with forces large enough to afford a credible military presence in this part of the world.

The United States consequently cannot avoid a major role in the protection of the Persian Gulf oilfields against external and internal threats. Nevertheless, some of our allies could contribute more than they are doing now. Britain and France are already participating in the defense of the gulf, but Germany, Italy, Japan, Canada, and the smaller NATO members are quite happy to leave this responsibility to others. While these countries may not have sufficient naval strength to put forces of their own into the area, they could certainly share in the considerable cost.

One way of getting them to share this cost would be a toll levied on oil passing through the Strait of Hormuz. Since at present about 6 billion barrels go through per year, the toll would not have to be very high to yield considerable revenue. One or two dollars per barrel (or between 2½ and 5 percent of the value) would probably suffice to pay for the total cost of the Western defense effort in the region. Moreover, since Persian Gulf oil competes to some extent with oil from elsewhere, the oil producers (who, of course, would be among the beneficiaries) would have to absorb part or all of the toll themselves. Initially, the toll could be collected by agreement with tanker owners, but if this leads to undue evasion more comprehensive collection procedures could be instituted. The effect of the toll, which could be administered by an appropriate international agency, would be to spread the cost of local defense among all affected parties.

A "security fee"—as the toll might diplomatically be called—would not be essential to the higher level of military preparedness in Southwest Asia discussed here. The toll is merely a device for sharing the financial burden, and might facilitate political consent to the necessary expenditures in the United States. It would no doubt be resisted by the many oil-importing countries that are now getting a free ride and by the oil producers in the Persian Gulf, who would probably have to yield a small fraction of their vast monop-

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oly profits. It could also raise questions of international law since the Strait of Hormuz is an international waterway. Unless skillfully handled, the security fee could be more trouble than it is worth. Nevertheless, raising it as a possibility would help focus the attention of oil importers on their exposure to risk and hence on their responsibility for doing something about the risk.

The Third World

Most of the growth in the world economy now occurs in the non-OPEC developing countries.[12] Although economic power does not necessarily lead to political influence – Japan, for instance, has one without the other – it is likely that such large Third World countries as Brazil, Mexico, and Pakistan will gradually adopt a more active foreign policy. In doing so, they may give new leadership to such groupings as the so-called nonaligned nations (also known as the Group of 77), which have hitherto tended to take their cue from the anti-Western governments of Cuba, Algeria, and Yugoslavia and to be tolerant of OPEC policies.

As the non-OPEC developing countries industrialize and urbanize, they will become increasingly dependent on imported oil. A few of them (Mexico and Argentina, for example) are capable of producing enough energy to satisfy their own long-run demand, but they are exceptions. Since countries in this group, unlike the older industrial nations, have not inherited a large capital stock with given energy requirements, they have some flexibility in choosing among different energy sources. Thus they will probably not be tempted to rely as heavily on oil for space heating or the generation of electricity as the OECD countries do. In the transportation sector, however, the use of oil is difficult to avoid. Consequently, the cost of oil has become a large item in the trade balance of the Third World.

Coming on top of the normal tendency of growing countries to run current balance-of-payment deficits, the rising cost of oil has put many of them into heavy debt. Most of them are in no position to repay these debts on schedule, and they will have to incur even larger liabilities if they want to continue their economic growth. The private capital market, with some help from bilateral foreign aid and official financial institutions, has so far done a good job of

[12] Although the major oil producers have substantially increased their incomes, this does not represent real growth, but merely a favorable change in their terms of trade. In fact, most of them are producing less than they did in the early 1970s. Some OPEC members, however, have had significant growth in their non-oil sectors.

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transferring OPEC's surpluses to the Third World. Nevertheless the question has often been raised whether it can do so indefinitely.

The difficulty is not that the funds are not there, but rather that so large a fraction has to move through private banks with limited capital. Although the wealthier members of OPEC frequently express fraternal sentiment toward the Third World, they prefer to have their assets in London, New York, or Zurich rather than in Ankara, Kinshasa, or Lima. Moreover, the OPEC deposits in Western banks often have shorter maturities than these banks' claims on developing countries, which in any case require constant refinancing. Thus each of these banks is exposed to a serious risk of illiquidity, although the international banking system as a whole is not. This situation clearly needs watching, but it does not appear to pose an immediate threat.[13]

From the political point of view, the advantage to the Arab oil producers of channeling their investments through Western banks is that it deflects the natural resentment of debtors toward their creditors. OPEC likes to present itself as the champion of the Third World against the wicked capitalists. Even though its policies of supply restriction impose a heavy cost on the Third World, OPEC has so far managed to avoid political isolation. This is one of the reasons for the failure of the diplomatic endeavors mentioned earlier to deal with the OPEC menace.

How can the resulting weakness of the industrial countries be overcome? It will hardly be enough to point out to the developing oil-importers where their true interests lie; their trust in Western analysis is quite limited. Nor is there much promise in greater political selectivity when granting credit; the international banks cannot afford to let their customers go under. What could be more effective is what Plummer has described as "oil proliferation," a massive effort to find oil in countries that are now importers.[14] To some extent this effort is already underway and has met with moderate success in Egypt, Peru, and a few other places. However, it has probably fallen far short of its full potential.

The difficulty is not primarily financial: Exploration is not very expensive, and once a discovery is made credit for the much costlier development phase can normally be obtained. The real problem is that the necessary expertise is mostly in the hands of Western oil companies who will, understandably, make it available

[13] See the chapter by Philip Verleger in Deese and Nye, *Energy and Security.*

[14] James L. Plummer, "Financing Oil Proliferation in Developing Countries," in *Energy Vulnerability,* ed. James L. Plummer (Cambridge, Mass.: Ballinger, forthcoming).

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only when the incentives are sufficient. So-called service contracts, in which the successful explorer does not acquire any equity in his discoveries, rarely meet this test. On the other hand, equity arrangements are often resisted by prospective host countries in the mistaken belief that they amount to giving foreigners a part of the national patrimony. A legal formula reconciling these different points of view is needed to make "oil proliferation" a reality, thereby weakening both the economic and the political power of OPEC.

The word "proliferation" has been more traditionally associated with nuclear power and especially with its use in the Third World. Elaborate export licensing and inspection schemes have been set up to forestall military applications of allegedly commercial or scientific atomic reactors. These schemes have had considerable but not complete success. The danger of nuclear proliferation is still with us, not least because producers of nuclear equipment are hard pressed for orders. Even from a strictly economic point of view, nuclear power, in fact, has not become more attractive, despite the largely unanticipated rise in oil prices. High interest rates work against this capital-intensive form of energy, as does the ever-increasing demand for safety devices. Generation of electricity from coal appears to maintain its economic advantage over nuclear power in the Third World, while hydroelectricity is a strong competitor in some areas. Natural gas, found in many places but expensive to transport, is another alternative to atomic energy, and even solar energy may one day approach commercial feasibility. Nevertheless, it is still likely that nuclear power will provide a major portion of Third World energy supplies in the next century.[15]

The Communist-Controlled Countries

The Soviet Union is the largest oil producer in the world and the second largest producer (after the United States) of coal and natural gas. Being roughly self-sufficient, it is not now a major factor in the world energy market, particularly since most of its exports go to its Eastern European satellites.[16] Energy considerations, however, have

[15] See Hendrik S. Houthakker and Michael Kennedy, "Long Range Energy Prospects," *Journal of Energy and Development* 4 (Autumn 1978); also see *Energy in Transition, 1985–2010,* Final Report of the Committee on Nuclear and Alternative Energy Systems, The National Research Council, National Academy of Sciences (San Francisco: W.H. Freeman and Company, 1980), chap. 10.

[16] China is even less of a factor. Its energy production is sizable in absolute terms, but small in relation to its population. Increases in its production will probably be largely absorbed domestically, while significant gains in imports are unlikely

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assumed greater importance in East-West relations. The main reason is that Soviet oil production is growing slowly, although not quite as slowly as the Central Intelligence Agency, in a widely cited analysis, had predicted some years ago. To some extent the slow growth in oil is offset by a rapid rise in natural gas output, particularly from giant discoveries in western Siberia. Nevertheless, it is clear that Moscow is concerned about its oil prospects and would like to improve them with the aid of American technology. The rigidity and waste inherent in Soviet-style central planning make it hard to adjust domestic use, and unless output is increased there may not be enough oil to satisfy export demand.

Russia will be reluctant to cut oil exports to the West because it needs the hard-currency earnings. A more likely reaction to a shortfall is a reduction in exports to Eastern Europe, which is already relying on OPEC to some extent. This reduction would be painful since some of the countries involved are hard pressed as it is. The economic troubles of this region are due mostly to Communist mismanagement but have been aggravated by the high price of oil from Russia and the Middle East.

Should the Western countries assist the USSR in expanding its oil production by giving it access to advanced technology? As is often true in East-West trade issues, this question could be decided unambiguously if economics were the only consideration. Increased Soviet oil production would add to non-OPEC supplies and thus benefit all importing countries; it might even keep Russia from becoming a direct customer for OPEC oil. Some Western firms would be able to profit from potentially large sales of technology and equipment. Politically, however, the answer is different. The inadequacies of Russia's economy, of which the oil problem is just one symptom, are the severest constraint on the global ambitions of Moscow's ruling circles. Shortages of all kinds are common. Moreover, the government tends to give priority to its own citizens over those in Eastern Europe. Some of the satellite countries can earn enough hard currency to offset reduced supplies from Russia by imports from elsewhere; others cannot. Poland, in particular, is already heavily in debt to Western banks.

As the most vulnerable area in the Soviet empire, Poland in fact is the touchstone for Western policy toward the East. It is not only the

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because of balance-of-payments constraints. The principal energy issue in Western relations with China is the participation of international oil companies in exploration and possibly development. As long as there are adequate safeguards against expropriation, the West has no reason to oppose participation on commercial terms, about which the Chinese rulers appear in any case to be ambivalent.

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largest of the satellites, but it also occupies a strategic location between the USSR and its frontline armies in East Germany. A long tradition of nationalism intertwined with Catholicism, reinforced by the election of a Polish pope in 1978, has made the large majority of the Polish people – including, it appears, most members of the Communist Party – impervious to Communist ideology. Despite their overwhelming support, the leaders of the unions and of the church have been careful not to give the Soviet Union a pretext for occupation; thus they have not cast doubt on Poland's continued adherence to the Warsaw Pact. For the time being, the Russian leadership, apparently anxious to avoid a return to the Cold War, has followed a relatively conciliatory approach to the Polish problem, and this has involved economic concessions that do not come easily.

Though the NATO countries cannot intervene in Poland directly without risking World War III, they are under no obligation to facilitate Soviet control over Eastern Europe. Specifically, the security of the West will gain as Poland becomes a political and economic burden to its oppressor. To the extent that lagging oil output weakens the Russian economy it makes this burden heavier. Such political considerations would seem to outweigh the economic advantages to the West of larger Soviet oil productions.

It has often been argued that a shortage of oil might lead the USSR to military ventures or to more determined attempts at subversion in the Persian Gulf area; this concern was the principal reason for the proclamation of the Carter doctrine. The danger is not illusory, but neither does it appear at all immediate. Provided the West continues to assert its vital interest in the area and to back it up by an adequate local presence, the Soviets will remain cautious for fear of unleashing a global conflict. Until now Russia has not been particularly successful in the area: It lost all of its influence in Egypt and most of it in Iraq, and was unable to exploit the Iranian revolution. The occupation of Afghanistan no doubt improved its tactical position, but it also brought substantial Western forces into the region, thus continuing the stalemate. The need for military preparedness in Southwest Asia was discussed in the section on OPEC.

The Soviet Union, as mentioned earlier, has been more successful in finding natural gas than in finding oil. Although gas is sometimes described as a "premium fuel," it has the disadvantage of a much higher transportation cost than oil or coal, a problem that is especially serious when the gas is in such remote areas as northwestern Siberia. Rather than having to invest in more pipelines to

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the urban and industrial regions of the USSR, the Soviet leadership prefers to export the gas through pipelines built with foreign capital.[17] For reasons discussed below, these plans have had a favorable response in West Germany and some of the other Western European countries, but have recently been held up by disputes over interest rates. Moreover, the transportation route has had to be moved further south because the original route would go through Poland, no longer considered reliable. The United States has expressed strong doubts about the wisdom of this project because it would make West Germany unduly dependent on Russian energy supplies. Actual construction of the pipeline now appears unlikely.

Western Europe and Japan

The plan to import Siberian gas exemplifies the discord introduced into Atlantic relations by the energy problem. Although partly motivated by such mundane considerations as the large quantity of German steel that would go into a pipeline, the project also reflects factors that are more strictly political. In fact, its economics is as dubious as that of the gas pipeline from Alaska to the "lower 48," all the more so because plenty of gas should be available from existing and prospective fields in the North Sea. The project can be explained only in the context of a West German desire for closer relations with the Soviet Union.

This desire reflects a gradual disenchantment, not confined to Germany, with American leadership in foreign policy. The loss of the Vietnam War and the forced resignation of President Nixon were probably the first events to undermine European confidence in the United States. President Carter's erratic conduct of international affairs appeared to confirm the earlier doubts. Influential factions in West Germany were encouraged to find ways of hedging its commitment to Washington's policies. Continuing hopes for reunification with East Germany also played an important role in this subtle change in policy. None of this, however, has interfered with Germany's adherence to NATO.[18]

[17] For many years attempts have also been made to interest the Japanese in importing natural gas from eastern Siberia, so far without success. Proposals for joint development with Japan of oil discovered on and near Sakhalin have not gone far either.

[18] In any case, any German inclination to look eastward tends to make France turn the other way, toward the Atlantic alliance of which it has for many years been only a nominal member. Thus NATO as a whole has probably not been seriously weakened, even though some of the smaller members have developed more explicitly neutralist tendencies.

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The emergence of the energy problem in the early 1970s also served to increase the political distance between Europe and North America.[19] The creation of the International Energy Agency was a limited though positive step toward a common front in energy matters, but divergencies soon appeared. The United States and Canada reacted to the rise in the world price of oil by insulating their domestic market through price controls, a short-run expedient that made the situation more difficult for other oil importers (and also, after a brief respite, for themselves), while the Europeans and Japanese not only allowed the world price to prevail domestically, but increased indirect taxes on petroleum products, thus reinforcing the necessary adjustment process. The result was that oil imports into North America rose sharply, while those into Europe and Japan declined. It was only toward the end of its term that the Carter administration, partly under pressure from abroad, recognized the folly of preventing the market mechanism from doing its job. By then, those in Europe and Japan who questioned the ability of the American political system (increasingly dominated by Congress) to look beyond the next election had more grist for their mill. The Reagan administration made a good start toward better international energy relations by abolishing oil price controls as soon as it took office, but gas prices have not yet been set free.

Reliance on the market mechanism was not the only energy-related issue dividing the United States from its allies overseas. As noted above, the latter also had more faith in the possibility of a political settlement with OAPEC, the Arab subset of OPEC (not to mention the abortive North-South dialogue). Apparently taking Arab rhetoric at face value, many Europeans harbor the illusion that a favorable resolution of the Palestinian conflict will lead OPEC to change its pricing behavior.

Whatever one may think of the balance between economic and political determinants in the cartel's behavior, the fact is that Europe and Japan had and have nothing of value to offer. The conservative rulers of Saudi Arabia, Kuwait, and Abu Dhabi do not favor recognition of the radical Palestine Liberation Organization. European and Japanese influence over Israel is slight, so there is no credibility in territorial proposals that would jeopardize Israel's jealously guarded security. The Arabs understand this as well as anybody: They have interpreted European gestures toward the PLO as mere atmospherics and have made no concessions in return—least of all on oil prices. In contrast to their performance on

[19]Much of what is stated here about Europe applies to Japan as well.

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the economic side, Europe and Japan have little to be proud of in their oil diplomacy. The United States, on the other hand, can point to the Camp David accord as a major political accomplishment.

Now that the United States has restored the price mechanism to its rightful position and Europe and Japan have seen their diplomatic efforts come to nothing, there should be scope for better mutual understanding in the energy field. The International Energy Agency remains useful as a framework for emergency measures, but its effectiveness in long-term policy coordination remains to be tested. It can of course be argued that there is little need for policy making and that the energy problem should be left to the free market. Given the unimpressive record of government intervention in this area, this argument must carry weight. It is also true that the few measures that the IEA countries could with advantage take jointly – in particular a tariff on imported oil – are politically unpopular; in any case, the best time for introducing a successful tariff (i.e., one that would be paid in large part by OPEC) may have passed.

Nevertheless, there is still so much government intervention in the energy field that closer policy coordination is needed. Perhaps the most important item is oil and gas production within OPEC. The United States, long the laggard in this area, has recently regained some ground by decontrolling crude oil prices; as a result, exploration is now at the highest rate since the 1950s, and production has also benefited. The regulatory climate for greater production in Canada (discussed in the next section), the United Kingdom, and Norway, however, is much less favorable. The Conservative government in Britain, contrary to earlier hopes, appears to be reverting to the restrictive oil policies of its predecessors,[20] and Norway continues to proceed slowly with the development of its resources.

Nuclear power is another subject on which government policies have to be harmonized. As pointed out above, atomic energy is now less competitive than a few years ago because of high interest rates, intensified concerns about safety after the Three Mile Island accident, and slower growth in electricity demand.[21] These factors favor coal, of which the United States and Australia are the principal sources. Unfortunately, American coal exports have been

[20] For an analysis of British policies concerning North Sea oil, see Hendrik S. Houthakker, "The Use and Management of North Sea Oil," in *Britain's Economic Performance*, ed. Richard E. Caves and Lawrence B. Krause (Washington, D.C.: Brookings Institution, 1980).

[21] On the other side, uranium prices have recently weakened considerably as a result of new discoveries and postponement of nuclear projects.

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hampered by inadequate port capacity, but this constraint should be removed within the next few years. In any case, nuclear power cannot be counted out for the longer run; environmentally, for instance, it is far superior to coal-fired electricity generation, and the safety implications of Three Mile Island have probably been exaggerated. Under the Carter administration a wide gap developed between the nuclear policy of the United States and those of most of its allies. Not only did the United States postpone development of the breeder reactor and of reprocessing while a few other countries went ahead with both, but the United States also sought to discourage some nuclear plans in the Third World, contrary to the sales efforts of Western European and Canadian manufacturers. The Reagan administration appears to be more favorably disposed to atomic energy, without which sustained growth in the world economy is difficult to imagine.[22] This makes it all the more important to maintain agreement with other interested countries (including the Soviet Union) on the necessary safeguards against proliferation and diversion. Lethal materials are not a commodity with which the free market can always be trusted. The sale of a French nuclear reactor to Iraq, a country believed to support international terrorism, is just one example of the inherent danger.

Canada and Mexico

Energy issues have become prominent in the intracontinental relations of the United States. Relative to their populations, though not in absolute terms, both Canada and Mexico are rich in energy resources. Although Mexico was a major oil producer in the early part of this century, its reserves were prematurely depleted, only to be revived within the last decade by spectacular discoveries of both oil and natural gas. Canada's history as an energy producer does not go back very far, but neither has it been so marked by ups and downs. The United States has traditionally been the major market for the energy exports of both of its neighbors.

American oil companies played a large part in the initial discovery and subsequent development of Mexican and Canadian hydrocarbons. In Mexico this frequently controversial involvement came to an abrupt end in 1938 when foreign oil interests were expropriated in favor of the national oil company, Pemex. Nothing as drastic ever happened in Canada, but in recent years the government in Ottawa has increasingly favored Canadian-owned companies. Even before 1973 energy matters could not be divorced

[22]See Houthakker and Kennedy, "Long Range Energy Prospects."

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from domestic politics in either country, and this became still more true after the world price rose sharply in 1973–74.

Until the early 1970s Canada exported oil and gas from its western provinces to the United States, while eastern Canada imported oil from the rest of the world.[23] As was true in the United States, Canadian production of hydrocarbons declined rapidly because incentives for exploration and secondary recovery were insufficient to overcome the depletion of existing fields. When the world price of oil went up, Canada, like the United States, imposed price controls and an export duty, which are still in force. As a result, domestic consumption has remained relatively high while production has fallen further behind demand, so that Canada is now a net oil importer on as large a scale, relative to its population, as its southern neighbor. It is still an exporter of natural gas and electricity, however.

Canadian oil policy can only be understood in the context of the regional conflicts that bedevil the country. The federal government has long (with one brief interruption) been controlled by the Liberal party, whose constituency is almost entirely in Ontario and Quebec. Oil and gas are found only in the western provinces, and more recently off Newfoundland and in virtually uninhabited Arctic areas. A policy of low oil prices appeals both to consumers and industry in the two Liberal provinces because the resulting oil imports tend to keep the Canadian dollar low and thus protect Canadian manufactures against import competition. As a partial offset the federal government has granted generous tax concessions for exploration, but the resulting large discoveries have not led to greater production because prices remain under control. In order to put pressure on Ottawa, the government of Alberta has recently ordered cuts in oil output. A recently intensified program to "Canadianize" the oil industry has further discouraged the many U.S.-controlled companies; it has also brought protests from the United States.

Overshadowing these energy problems is the disagreement over the Constitution between Ottawa and most of the provinces. An even more serious threat to national unity, the separatist plan of the Parti

[23] Brief mention should also be made of the unhappy history of U.S.-Canadian relations in the nuclear field. Prevented by an embargo from exporting uranium to the United States, or from having its own uranium enriched there, Canada developed a heavy-water process using natural uranium. Several reactors of this type are operating in Ontario, but hopes of a substantial export trade have not materialized; the most notable export was to India, which used it to produce a nuclear bomb. It does not appear that heavy-water reactors are competitive with light-water reactors.

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Québecois, was rejected by the voters but may be revived in the future.[24] Evidently domestic politics in Canada has reached a point where rational decision-making in the narrow field of energy can hardly be expected. Preoccupied with the need to keep the country together, the Trudeau government is attempting to maximize its short-term political support, and if this means larger oil imports or playing on the anti-American tradition in Ontario, so be it.

Under these circumstances, the prospects for closer U.S.-Canadian collaboration on energy matters are minimal. The United States also has a strong interest in Canadian unity, without which we would have to worry about security along our northern border. Even if this interest did not exist, few things would do more to inflame the Canadian domestic problem than the mere hint of American intervention. The United States can only influence Canadian policy through the federal government in Ottawa, which remains in charge of external relations even though each province controls the energy resources in its territory.

The Canadian political situation has already held back oil and gas production from existing fields and may also have an adverse effect on the development of recent new discoveries, of which those on the East Coast are of particular concern to the United States. In addition, the economic feasibility of the tar-sand and heavy oil projects in and near Alberta has been put in doubt by new federal measures. Ottawa is apparently still insisting on construction of the Alaska gas pipeline, which would connect some remote Canadian fields with the United States, but Washington has made it clear that completion of the pipeline depends on the availability of private financing. Because of the enormous cost of the project (current estimates are around $30 billion), the delivered cost of Alaska gas would be too high to compete with other actual and potential supplies, so sufficient private funds are not likely to be forthcoming.[25]

It is conceivable—indeed probable—that the confrontation between Ottawa and the resource-rich provinces will in due course give way to a mutually satisfactory compromise permitting Canada

[24] Energy considerations have also had a part in this issue. Quebec has a vast hydroelectric potential along the southern shore of Hudson Bay. The natural market for some of this power is in the United States, particularly in New York with its high local generating costs. The sales efforts of the Quebec government in the United States have at times assumed political overtones, as if their real purpose was to make an independent Quebec acceptable here.

[25] The economic justification of this project was first publicly questioned by Walter J. Mead; see Walter J. Mead, George W. Rogers, and Rufus Z. Smith, *Transporting Natural Gas from the Arctic: The Alternative Systems* (Washington, D.C.: American Enterprise Institute, 1977); subsequent events have only reinforced his case.

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to pull its weight in the effort to make the West less dependent on OPEC. Once this is accomplished, the United States will again be in a favorable position as the natural market for Canadian gas and hydroelectricity and to a lesser extent for oil. At present, however, the conflict is still escalating, and there is little the United States can do about it.

Although equally influenced by domestic considerations, the energy situation in Mexico differs in many respects from the one in Canada. The hydrocarbon discoveries of the 1970s have propelled Mexico into the front rank of the world's oil provinces, not far behind Saudi Arabia. Moreover, the fields discovered in the southeastern states of Chiapas and Tabasco are unusually prolific and closer to major markets than the Persian Gulf. For a country hard pressed to find employment for its rapidly growing population and financing for its industrial development, these discoveries could not have come at a better time, the more so since they coincided with a steep rise in the world price of oil. Mexico therefore had and has strong incentives to forge ahead with the development of its hydrocarbons. Between 1973 and 1980 its oil production quadrupled and its gas production doubled.

Nevertheless, Mexican energy policy has also been influenced by the country's longstanding distrust of the United States aggravated by the shortsighted tactics of the Carter administration. Anxious to keep domestic gas prices down to their prevailing uneconomic level, the United States in early 1978 rejected a reasonable offer of natural gas, only to find in 1980 that it had to pay twice as much.[26]

If exported, Mexico's gas will normally go to the United States, but another possible use is in the production of fertilizer and petrochemicals, where Mexico is building massive capacity. In fact, Mexico plans that the bulk of discovered and prospective hydrocarbons be consumed at home. Moreover, Mexico is determined to diversify its oil exports even if this means obtaining a lower price

[26]One stumbling block in 1978 was the Mexican demand for parity between the prices of gas and residual fuel oil. The issue of parity has also led to a breakdown in American negotiations with Algeria, a major exporter of liquified natural gas. This is not the place for a full discussion of this somewhat technical matter. Suffice it to say that in the United States, where the transportation demand for oil products dominates the heating and steam-raising demand, gas is not a close substitute for oil since it cannot be used for transportation; consequently, there is no economic justification for parity. In countries where transportation demand is less important, it may be reasonable to expect parity in *delivered* prices. This in turn means that the gas price *at origin* will be lower than the price of oil there (assuming that the same country exports both) because gas is costlier to transport. There is no economic case for parity at origin.

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than could be had in the United States. While the disagreements over gas exports to the United States have done nothing to improve relations across the Rio Grande, they are not of major importance to U.S. energy supplies in the long run.[27]

Enough has been said about energy policies in Canada and Mexico to make it clear that the idea of a "North American energy market" has no basis in reality. Presumably such a concept would involve guaranteed U.S. access to exports from its contiguous neighbors in return for some promise of nondiscrimination in pricing and exploration. It would make considerable sense from an economic point of view but would also require an unlikely reversal of long-standing political sentiments in all three countries. The best the United States can hope from its neighbors—particularly from Canada—is an improved climate for domestic energy production. In the case of Mexico, our main concern must be that the present expansion-minded policy will not be reversed by later administrations.

Implications for U.S. Foreign Policy

By way of a summary the following conclusions can be stated:

1. In dealing with OPEC the main emphasis should be on further weakening the cartel's market power by encouraging energy production and discouraging energy consumption in non-OPEC countries outside the Soviet sphere.

2. There is little prospect of a meaningful political agreement with OPEC or with its Arab members; the efforts of Europe and Japan to seek such an agreement should have no support from the United States.

3. The security of the Persian Gulf is of vital concern to the industrial countries. It is threatened at least as much by internal forces as by the Soviet Union and requires additional military preparedness, possibly including the construction of permanent offshore facilities in or near the gulf. The financing of these efforts by a "security fee" levied on oil movements should be considered.

4. In the Third World the West should assist energy development as much as possible; at the same time, it should seek to

[27] Since Mexican exports are likely to be limited by strong domestic demand, the often-raised question of Mexican membership in OPEC is not even of academic interest. These exports, of course, will be at world prices—strongly influenced by OPEC—but Mexico will hardly be interested in any production controls on which OPEC may agree in the future.

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undermine the political links between OPEC and the developing countries.

5. It is not in the overall interest of the United States and its allies to facilitate oil and gas exploration in the Soviet Union. European countries should be discouraged from becoming dependent on Russian energy supplies.

6. The United States and its allies should make new efforts to arrive at a common policy on nuclear power based on a realistic appraisal of its economic prospects.

7. Because of political obstacles, a "North American energy policy" is not a realistic goal, but the United States has a strong interest in the adoption of more rational energy policies by Canada.

8. The International Energy Agency merits continuing support as a mechanism for coping with emergencies; it may also be useful for coordinating long-term policies but should abstain from tactical recommendations.

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TAXATION AND INCOME REDISTRIBUTION: An Unsympathetic Critique of Practice and Theory

Richard B. McKenzie

> *The state is the great fiction through which everyone believes that he can live at the expense of everyone else.*
>
> Frédéric Bastiat

The United States has become to a considerable extent a redistributive society. The taxing power of the state continues to be used to transfer massive amounts of purchasing power from those who earn their keep to those relatively few who are truly in need and to those relatively many who are skillful in finding ways to remain on the receiving end of government handouts.

Many people now believe, and act as if, everyone can live at the expense of everyone else. As government welfare programs have expanded – or perhaps because of the expansion in those programs – democracy has been converted to a great extent into a competitive struggle over slices of the governmental welfare pie. The numerous groups who have an interest in the maintenance and expansion of the welfare system must now scramble for money in the political arena, fearful that their budgets will be allotted to someone else more skillful in securing political favors.

Large redistribution programs are a negative-sum, not a zero-sum, game: Redistributive efforts on the part of government reduce the incentive people have to work and to generate real output and income. However, given the considerable increase in welfare ex-

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The author is Professor of Economics at Clemson University, Clemson, South Carolina 29631.

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penditures in the last forty years, it takes a lot of imagination on the part of those playing the redistributive game to see that redistribution is ultimately destructive of the social product. At present, they see only the positive correlation between their redistributive political efforts and the expansion of the welfare system. Indeed, to argue successfully that political efforts to redistribute income are illogical simply because redistribution, on balance, reduces the national income, is extremely difficult.

A fundamental cause of the gross expansion in redistribution programs is relatively obvious: Government has become so open-ended that nothing is necessarily outside its purview. Stated differently, there are no longer constitutional restrictions on what government can do—for good or bad. It should surprise no one that people therefore seek to employ the power of the state in the pursuit of their own narrowly conceived ends. As a result, we have become a "constitutional anarchy," a phrase coined by James Buchanan and intended to suggest the social disruption that can occur when the power of the state is unbounded.

In this essay, we attempt to focus greater public attention on government as a redistributive force in society. We begin by briefly presenting data on the distribution of income and the effects that government programs have had on the distribution. We then critically evaluate traditional and not-so-traditional arguments for redistribution that presume to justify redistributing income from one sector, particularly the rich, to another sector, particularly the poor. The essay concludes with a discussion of social remedies for the redistributive trap in which the American—and British and French and German and any number of other—people find themselves.

Social Welfare Expenditures

The facts relating to governmental efforts to redistribute the nation's income reveal the stark dimensions of the modern welfare state and its limited ability to relieve what are perceived to be problems of absolute poverty and maldistribution of income. Table 1 reveals that in the 1980 budget the federal government alone planned to spend over $283 billion on social welfare programs (called euphemistically "human resource" programs). This level of spending represented a dramatic increase over 1955, a year in which social welfare outlays were only about $15 billion. Indeed, between 1955 and 1980 federal welfare expenditures increased by an annual compounded rate of nearly 13 percent. As is evident from the table, during the 1980 fiscal year the federal government expected to

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TABLE 1

FEDERAL BUDGET OUTLAYS [IN BILLIONS OF DOLLARS] FOR SOCIAL WELFARE PROGRAMS (HUMAN RESOURCES), SELECTED YEARS, 1955–1982

	1955	1965	1975	1980 (estimated)	1982 (estimated)
Total Social Welfare Outlays	14.6	35.4	168.7	283.2	324.9
Income Insurance	9.1	25.7	108.6	179.1	207.5
Health and Medical	0.3	1.8	27.6	53.4	64.2
Education	0.4	2.1	15.9	30.2	31.5
Veterans Benefits	4.7	16.6	16.6	20.5	21.7

SOURCE: *The Budget of the United States Government: 1980,* pp. 84–85.

spend $179 billion on income security; more than $53 billion on health and medical care; $30 billion on education; and about $21 billion on veterans' benefits. Federal social welfare expenditures are projected to be almost $325 billion in 1982. However, it should be kept in mind that these figures actually understate the federal government's welfare efforts. A complete accounting of federal welfare expenditures would include social programs embedded in the budgets for agriculture, housing, community and regional development, as well as many other programs.

Table 2 reveals the dramatic growth in social welfare expenditures at all levels of government.[1] In 1977, the latest year for which data are available for all government levels—federal, state, and local—government spent approximately $361 billion on welfare programs, fifteen times the amount spent in 1950. That type of growth in expenditures gives one the impression that the early 1950s are now a distant epoch as far as social politics are concerned. Granted, price and population increases distort upward the growth in welfare expenditures. However, even after being adjusted for price increases, which have occurred most prominently in the last decade, welfare expenditures in 1977 had grown more than sixfold since 1950. Per capita welfare expenditures (total expenditures divided by the entire population) grew by significantly

[1] Figures in table 2 are not fully compatible with figures in table 1; one cannot subtract federal welfare expenditures in table 1 from the totals in table 2 to obtain state and local expenditures. Parts of the federal budgets are spent by state and local governments. Also, the figures are from different sources.

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TABLE 2

SOCIAL WELFARE EXPENDITURES, SELECTED YEARS, 1950–1977

YEAR	Total Social Welfare Expenditures (in billions of current dollars)	Total Social Welfare Expenditures (in billions of 1977 dollars)	Per Capita Social Welfare Expenditures (in 1977 dollars)	Social Welfare Expenditures (as percent of total government expenditures)
1950	$ 23.4	$ 58.4	$ 380	37.4%
1955	32.5	70.8	424	32.7
1960	52.1	101.8	557	38.4
1965	76.9	139.9	711	42.2
1970	145.5	222.8	402	48.2
1975	289.3	328.4	1,516	57.9
1977	361.5	361.5	1,646	59.7

SOURCE: Alma McMillan, *Social Security Bulletin,* vol. 42, no. 6 (June 1979), tables 2 and 3, pp. 9–10.

more than fourfold in the 1950–77 period. That growth in welfare expenditures means that in 1977 government at all levels in the United States was spending a total of about $1,646 per man, woman, and child, which indicates the extent to which the government continues to shift the nation's resources about. Without question, much income was lost through administrative waste in the numerous welfare programs.

More revealing than the figures on welfare expenditures in current and constant dollars is the growth in welfare expenditures as a portion of government budgets. Before the 1930s, welfare expenditures were a trivial part of relatively small government outlays. In 1950, on the other hand, welfare expenditures were about 37 percent of total government budgets. In the ensuing twenty-seven years, welfare expenditures grew relative to other categories of government expenditures to where, in 1977, they accounted for nearly 60 percent of *all* government expenditures, including programs for defense, roads, and energy. Furthermore, in 1950 welfare expenditures represented just under 10 percent of national income; by 1977 they represented almost 24 percent of the national income. In summary, one in every four dollars earned by someone in the country in 1977 was, in one way or another, channeled through the "welfare state."

From the figures that have been presented, one might get the impression that the welfare state has heaped benefits on the poor.

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TABLE 3

NUMBER OF PEOPLE BELOW OFFICIAL POVERTY LEVEL AND FEDERAL OUTLAYS BENEFITING POOR, 1964, 1969, AND 1974

	(1) Number of people below poverty level (millions)	(2) Federal outlays benefiting poor (billions of dollars)	Federal poverty outlays per poor person = (2) ÷ (1)	
			Current dollars	1974 dollars
1964	34.1	$ 7.9	$ 232	$ 368
1969	24.1	15.9	660	888
1974	24.3	29.0	1,193	1,193

SOURCES: (1) *United States Statistical Abstract,* various years. (2) Edgar K. Browning and Jacquelene M. Browning, *Public Finance and the Price System* (New York: Macmillan Co., 1979), p. 200; as found in United States Department of Health, Education and Welfare, Office of the Assistant Secretary for Planning and Evaluation Office of Program Systems, "Federal Outlays Benefiting the Poor – Summary Tables" (March 1974), table 1.

NOTE: The number of poor persons in 1974 is distorted upward by the recession of that year.

Such an impression is grossly distorted. Billions of dollars have been spent to help the poor, but as shown in table 3 federal outlays benefiting the poor remain a small portion, less than 25 percent, of total federal welfare expenditures. Federal outlays benefiting the officially classified "poor" were a little less than $8 billion in 1964 and only $29 billion in 1974. Clearly, the welfare state is not intended, in the main, to help the poor, not even the almost poor. Most of the welfare expenditures, about 75 percent of welfare budgets, are monies passed around among income groups above the officially defined poverty level. As the number of poor has declined, rather significantly (see table 3), and as welfare budgets have increased, rather substantially (see table 2), the growth in the welfare state has meant a dramatic increase in the number of people who are effectively on the welfare rolls. Even if we could believe, and we cannot, that welfare expenditures are intended to move purchasing power from the higher-income groups to the lower-income groups, the magnitude of the increase in social welfare expenditures indicates that, over time, higher and higher income groups, in absolute and relative terms, have become recipients of social welfare programs. Of course, not all social welfare

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outlays are intended to benefit the lower-income groups; some outlays – like higher education, some forms of medical outlays, veterans' programs, and housing – are intended to benefit the higher-income groups at the expense of the poor.

It should be noted that even the small portion of the welfare budget that is expended on the poor is enough to raise the average income of many poor people above the official poverty income level. A family of four, on average, received $4,772 worth of benefits in 1974. The official poverty level for that year was $5,038. Since many poor people earned some income, many actually took home more income than the official poverty level. Of course, many poor people earned little or nothing, and the benefits of poverty programs are not distributed equally among the poor; some poor families, therefore, received much more than the average benefits and the average total income, while others received much less than the average.

Sadly, the dollars spent on social welfare programs do not cover – nor are they intended to cover – the full extent of government efforts to engage in social engineering, that is, helping one group at the expense of another. The government intervenes in the market in a variety of ways, the net effect usually being to help one particular group. Minimum wage laws effectively increase the incomes of some workers – those who retain their jobs in the affected market – at the expense of people who lose their jobs and are forced to take work at lower wages. Tariffs blot out foreign competition, giving the protected industries opportunities to raise their prices and make more money. In their impact, the higher prices have much the same effect on consumer purchasing power as a direct tax increase on personal income. The greater incomes received by workers, owners, and suppliers of the protected industries are categorically the same as welfare transfers, such as checks distributed to low-income mothers with children. Incomes in the protected industries, like welfare checks, are greater than what could have been earned in a free market; they are the consequence of forced, involuntary shifts in purchasing power. Finally, we must note the variety of regulatory agencies and commissions – such as the ICC, FPC, FCC, FEA, and a host of licensing boards at the state and federal levels – whose basic function is to protect the "regulated" industries from competition. Although they often offset one another, the function of such agencies and commissions is to alter the flow of income in the country toward their regulated industries. Given the tariffs in effect in a wide variety of markets, the many regulatory agencies and commissions, and the number of people directly or in-

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directly dependent on government expenditures, it is safe to say that there are relatively few Americans who are not, in one way or another and to one extent or another, on the welfare dole.

The Impact of Government on the Distribution of Income

During the first half of this century, there was a marked trend toward greater equality in the distribution of earned and spendable income. This move toward equality was fostered in part, but not entirely, by the new social welfare programs of the 1930s.[2] However, since 1950 (when, it might be added, government efforts to change the distribution of income began to mushroom) the distribution of income has barely changed. The data in table 4 on the shares of the nation's income going to the lowest and highest quintiles of the population tend to bear this out.

The most widely reported figures on the distribution of income come from the Current Population Survey (CPS) undertaken by the Census Bureau. The CPS income measure includes salaries and wages, net income from self-employment, social security income, interest and dividends, net rental income, government cash transfers, private pensions, alimony, and regular gifts. Table 4 reveals that the share of income going to those families in the lowest quintile of the survey population changed from 5.1 percent in 1947 to 5.4 percent in 1974. The share of the income going to the lowest quintile of unrelated individuals changed significantly more, from 2.0 percent in 1947 to 4.1 percent in 1977. For families and individuals combined in the 1958–74 period (the span of years for which the data have been computed), the change in the relative share of income for the lowest quintile moved from 3.3 percent in 1958 to 3.8 percent in 1977. As shown in table 4, the movements in the share of income going to the highest quintile of the three groups—families, unrelated individuals, and families and unrelated individuals combined—have been downward but relatively small. However, the actual magnitude of the shifts in relative shares of income for the various groups depends critically on the years chosen for comparison. Still, the *trend* movements in the income shares of the highest and lowest (as well as all other) quintiles have been insignificant.

Other measures of income and calculated distributions of income tell basically the same story: The distribution of income has not

[2]Morgan Reynolds and Eugene Smolensky, "The Fading Effects of Government on Inequality," *Challenge,* July/August 1978, pp. 32–37.

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TABLE 4

INCOME SHARES FOR LOWEST AND HIGHEST QUINTILES OF POPULATION, AVAILABLE YEARS 1947–1977

	Census Bureau Percent of CPS Income[1]					
	(A) Families		(B) Unrelated Individuals		(C) Families and Unrelated Individuals	
Year	Lowest Fifth	Highest Fifth	Lowest Fifth	Highest Fifth	Lowest Fifth	Highest Fifth
1947	5.0	43.0	2.0	56.6	3.5	45.5
1948	4.9	42.4	2.5	50.8	3.5	44.7
1950	4.5	42.7	2.3	50.3	3.1	44.9
1952	4.9	41.9	2.6	49.7	3.5	44.3
1956	5.0	41.0	2.6	51.6	3.4	43.5
1958	5.0	40.6	2.4	52.9	3.3	43.4
1961	4.7	42.2	2.2	52.8	3.1	44.9
1962	5.0	41.3	2.6	52.7	3.4	43.9
1964	5.1	41.2	2.5	53.2		
1970	5.4	40.9	3.3	50.7	3.6	44.1
1971	5.5	41.1	3.4	50.4		
1972	5.4	41.4	3.3	50.9	3.7	44.8
1974	5.5	41.0	4.2	48.3	3.8	44.4
1977	5.2	41.5	4.1	48.2	3.8	45.2

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TABLE 4 (Continued)

	Radner-Hinrich[2] Percent of Family Personal Income		Reynolds-Smolensky[3] Predicted Percent of Adjusted Income (Post-Fisc)		Browning[4] Percent of Adjusted Family Income (Post-Fisc)		Census Bureau[5] Gini Coefficient for CPI Income
	Lowest Fifth	Highest Fifth	Lowest Fifth	Highest Fifth	Lowest Fifth	Highest Fifth	
1947	–	–	–	–	–	–	–
1948	–	–	–	–	–	–	–
1950	4.8	46.1	6.4	48.0	–	–	–
1952	–	–	–	–	8.1	36.7	–
1956	4.8	45.3	–	–	–	–	–
1958	–	–	–	–	–	–	.403
1961	4.6	45.5	6.4	49.0	–	–	.420
1962	–	–	–	–	8.8	35.4	.407
1964	4.2	45.5	–	–	–	–	.410
1970	4.6	44.9	6.7	50.6	–	–	.407
1971	4.8	44.6	–	–	–	–	.409
1972	–	–	–	–	11.7	32.8	.414
1974	–	–	–	–	–	–	.409
1977	–	–	–	–	–	–	–

SOURCES: (1) U.S. Bureau of the Census, *Current Population Report: Consumer Income,* series P-60, no. 118 (March 1979), table 13, pp. 44–48. (2) Daniel B. Radner and John C. Hinrich, "Size Distribution of Income in 1964, 1970, and 1971," *Survey of Current Business,* vol. 50, no. 10 (October 1974), table 10, p. 27. (3) Morgan Reynolds and Eugene Smolensky, *Public Expenditures, Taxes, and the Distribution of Income: The United States, 1950, 1961, 1970* (New York: Academic Press, 1977), table 5.4, p. 74. (4) Edgar K. Browning and Jacquelene M. Browning, *Public Finance and the Price System* (New York: Macmillan Co., 1979), table 7.7, p. 202, based on E. K. Browning, "The Trend Toward Equality in the Distribution of Net Income," *Southern Economic Journal,* July 1976. (5) Same as (1).

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changed very much in the last two to three decades. In a study of the distribution of "family personal income," Daniel Radner and John Hinrich found that the lowest quintile of the population received just about the same share throughout the 1950–71 period.[3] Morgan Reynolds and Eugene Smolensky, after making a number of adjustments to the CPS income measure, found that the lowest quintile of households had 6.4 percent of net income in 1950 and virtually the same share, 6.7 percent, in 1970. They concluded that the data show that "when the benefits of all government expenditures were added to the labor and capital income of U.S. households and the burden of taxes subtracted, the overall distribution of income had not changed significantly between 1950 and 1970. To be sure, the distribution of income that included the effects of government budgets was significantly closer to equality than the distribution made up of just labor and capital income, but we could not detect any significant trend in the degree of inequality."[4] The Gini coefficient (also in table 4), which is an alternative means of measuring the equality or lack of equality in the distribution of income across all income groups, moved up and down during the 1958–74 period but was virtually the same at the end of the period (.409) as it was at the beginning (.403), indicating, again, almost no movement toward greater income equality.

Only one major study of the distribution of income in recent years contradicts the data that have been presented. It was done by Edgar Browning at the University of Virginia, and the results are reported in table 4.[5] Browning made five major adjustments to the CPS income measure for families: First, he included in the distribution of income an imputed value for in-kind government transfers. Second, he added an estimate of the potential earnings of all adults in the labor force. Third, he included an estimate of the costs of the education provided by all levels of government. Fourth, he computed the distribution of family income on a per capita basis, thereby adjusting for the observed reduction in the number of people in families, especially among the poor. Fifth, he deducted an estimate for the personal income and social security taxes people pay. After

[3]Daniel Radner and John Hinrich, "Size Distribution of Income in 1964, 1970 and 1971," *Survey of Current Business*, vol. 50, no. 10 (October 1974), table 10, p. 47.

[4]Morgan Reynolds and Eugene Smolensky, "The Fading Effects of Government in Inequality," p. 32. See also Morgan Reynolds and Eugene Smolensky, *Public Expenditures, Taxes, and the Distribution of Income: The United States, 1950, 1961, 1970* (New York: Academic Press, 1977), especially chap. 5.

[5]E. K. Browning, "The Trend Toward Equality in the Distribution of Net Income," *Southern Economic Journal* 43 (July 1976): 912–23.

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making these additions and subtractions, Browning found that the lowest quintile received 8.1 percent of net income in 1952 and 11.7 percent in 1972, a 44 percent improvement in relative income share, a rather startling assessment given the findings of all of the other studies.

Has the distribution of income moved toward greater equality or has it not? This question has no simple answer. All measures of income are defective in one way or another. Adjustments that are made to measure incomes are often more or less arbitrary and rather crude. For example, when the goods and services given under welfare programs are not bought by their recipients in the market, it is difficult to place a dollar value on in-kind transfers. Also, it is difficult to say whether the reduction in the size of the family has lowered the standard of living of the poor or if it is a consequence of an improvement in their standard of living. Finally, when people are unemployed it is extremely arbitrary to specify a market value for their so-called leisure time. A detailed accounting of the pros and cons of particular adjustments to income made in individual studies would take this essay far afield.[6] Suffice it to say that at a conference of researchers working in the area of income distribution, the trend in the distribution of income, as revealed by Reynolds and Smolensky and by Browning, was critically evaluated, and "the consensus at the conference placed the 'true' trend between these two positions, but somewhat closer to Reynolds and Smolensky: although many biases have a large impact on the level of inequality [as measured by the CPS income], the net results of these biases on the trend were judged to be small."[7]

Over the past twenty-five years governments at all levels have inaugurated innumerable social welfare programs and have spent literally hundreds upon hundreds of billions of dollars in their quest for income redistribution. However, the record reveals that nothing seems to have happened: *Standard techniques for measuring income show that the distribution of income has not changed very much from what it would have been in the absence of government programs.*

[6]For an in-depth critique of these studies as well as of others, see Michael K. Taussig, "Trends in Inequality of Well-Offness in the United States since World War II," a review paper presented at the Conference on the Trend in Income Inequality in the United States held at the Institute for Research on Poverty, University of Wisconsin–Madison, October 29–30, 1976.

[7]Sheldon Danziger, "Conference Overview: Conceptual Issues, Data Issues, and Policy Implications," summary statement of the Conference on the Trend in Income Inequality in the United States held at the Institute for Research on Poverty, University of Wisconsin–Madison, October 29–30, 1976, pp. 98–99.

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Why? Is the answer simply that government is ineffectual, incompetent, impotent—unable to accomplish efficiently what it has set out to do? Is it that government never really had its heart in the pursuit of its ostensible objective? Is the answer that social welfare programs have ended up benefiting those who run them more than the poor themselves? Very possibly all of these answers have more than a grain of truth in them. However, other speculative answers can be offered. As Reynolds and Smolensky have pointed out, attempts to redistribute income met initially with some success, but over the last two decades several discernible changes have occurred:

First, the expansion of welfare programs, especially social security, has meant that the programs' coverage has expanded. Although welfare programs may have begun with well-defined low-income groups in mind, they have ended with coverage for virtually the entire population. Consequently, the redistributional effect of the programs has eroded.

Second, workers, who must ultimately fund the welfare programs through taxation of their incomes, have learned over time to alter the form of their earnings from taxable income, such as wages and salaries, to nontaxable income, such as fringe benefits and leisure.

Third, recipients of the welfare programs have adjusted their own behavior. In light of the very high marginal tax rates implicit in social welfare programs, they have decided quite rationally to work less in order to secure more welfare benefits. On balance, their incomes may have risen by only a fraction of the dollar value of the welfare benefits.

Fourth, the welfare system has progressively reduced the efficiency of the U.S. economy. The result may have been that the improvement in the earned income share of the lower-income groups has been impaired.

Fifth, over the last fifty years the tax code has been gradually broadened to include lower and lower income groups. The first federal income tax in 1913 applied to the incomes of only the very high income groups. Now the tax code applies to just about everyone aside from the very low income groups. The result has been a reduction in the equalizing effects of the tax system. The social security tax on employer and employee income has been progressively raised, with disproportionately strong effect on the lower-income groups.

Sixth, in the past twenty years state and local government taxes and expenditures have risen relative to federal taxes and expendi-

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tures. Aside from education, social welfare programs make up a relatively small part of the expenditures of state and local governments. Hence, growth in government at the state and local levels has tended to offset the redistributional effects of federal welfare programs designed specifically to help the poor.

Theories of Income Redistribution

Proponents of income redistribution have developed a number of theories intended to justify governmentally induced shifts in the nation's income. Several of the more prominent theories are evaluated in this section. The general conclusion drawn is that income redistribution by government has a very spongy, if not nonexistent, theoretical foundation.

Redistribution as Social Welfare Maximization

One of the oldest arguments used to rationalize income redistribution relates to a misunderstanding and misapplication of the principle of diminishing marginal utility in consumption. Stated properly, that principle says that as a person consumes additional units of a good, there is some point beyond which the relative marginal utility of each additional unit consumed will begin to diminish. In the nineteenth and early twentieth centuries the principle was taken to mean that beyond some point in consumption the *absolute* marginal utility of consuming additional units of a good begins to diminish. Indeed, it was readily, but incorrectly, assumed by many economists that marginal utility in consumption diminished from the very first unit. Social reformers concluded that aggregate social welfare could be enhanced by redistributing the nation's income from the rich to the poor. It was thought that the marginal utility of the last units of goods consumed by the rich was, by the very fact that they consumed more, lower than the marginal utility of the last units consumed by the poor. Hence, redistribution increased the total "utils" of satisfaction in society. How forced redistribution satisfied the Pareto principle for economic efficiency is not clear.

This justification for redistribution has been severely criticized on almost all grounds. First, it is conceptually impossible to make interpersonal utility comparisons. (We would not know a unit of satisfaction if we saw it, much less be able to say how different people value different goods!) Second, there is no real reason to believe that the marginal utility in consumption actually does diminish within the relevant range of consumption (that is, within realistic budget limitations). Third, the principle of diminishing marginal

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utility applies to the allocation of a *given* budget among a list of *specified* goods and services, not to the impact of changes in the budget level. For all we know, from a conceptual point of view the marginal utility of additional units of goods increases in absolute terms when more of *all* goods are consumed. If the principle of diminishing marginal utility has any use at all in consumption theory, it must relate to the change in the individual's *relative* marginal evaluation of goods when allocation decisions are made. There is no reason, therefore, to believe that the rich's *relative* evaluation of goods on the margin is any lower or higher than the poor's *relative* evaluation of those same goods, that the rich's marginal evaluation of income is any lower or higher than the poor's marginal evaluation of income, or that a shift in the distribution of income from the rich to the poor will necessarily increase social welfare.

The Rawlsian Theory of Justice[8]

Through the centuries philosophers have grappled with the question of whether there is a logical basis for ethical values. A primary concern of their struggle has been with developing principles that will enable people to decide whether or not a community's distribution of basic rights (such as the rights of free speech and the vote), wealth, and income are socially just or unjust; in other words, philosophers—economists included—have been in search of the broad theoretical outlines of the just society. In recent years Harvard philosopher John Rawls has organized what he calls "a theory of justice" that he believes incorporates the guiding principles people seek.[9] Rawls's theory is founded on several intuitively plausible postulates. First, in some endeavors people are better off acting cooperatively than they are acting alone. Second, there are a number of ways of organizing human interaction. Third, people must have some means or set of principles for judging and choosing from among the various potential social arrangements that arrangement which is "best." "These principles," according to Rawls, "are the principles of social justice: they provide a way of assigning rights and duties in the basic institution of society and they define the appropriate distribution of the benefits and burdens of social

[8]This section is a revised version of a discussion of Rawls's theory of justice found in Richard B. McKenzie and Gordon Tullock, *Modern Political Economy* (New York: McGraw-Hill, 1978), pp. 367–70.

[9]John Rawls, *A Theory of Justice* (Cambridge, Mass.: Harvard University Press, Belknap Press, 1971). For an excellent summary of this book, see John Rawls, "A Kantian Conception of Equality," *Cambridge Review*, February 1975, pp. 94–99.

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cooperation."[10] (Examples of basic social institutions are the legal protections of freedom of thought and liberty of conscience, competitive markets, private ownership of the means of production, and the monogamous family.) Fourth, people are moral in the sense that they understand the need for and are prepared to affirm a conception of justice by which all social institutions can be judged.

In developing his theory of justice, Rawls is not interested in seeking and defining principles of justice that flow solely from the dictates of reason or science or that are derived from the teachings of a religion, although religious views may be a part of the process by which the guiding principles are derived. Rather, Rawls is interested in developing those principles that "free and rational persons concerned to further their own interests would accept in an initial position of equality as defining the fundamental terms of their association."[11] It is the acceptance of the principles of social justice by all people, however different their motives, that is the essential element of the Rawlsian theory. In taking this position Rawls recognizes, as James Buchanan has suggested, that "unless we are to be rescued by a 'savior' or 'saviors' who will enslave us all, modern men and women must reform their own institutions. Rules can be changed while the game continues to be played, but few players are willing to delegate decisions on such changes to the self-annointed witch doctors."[12]

With respect to changes in the distribution of income, the subject of this essay, Rawls seeks guiding principles that are not imposed upon, but emerge from, a social setting of people who recognize the need for general agreement: "The scheme of social cooperation must be stable: it must be more or less regularly complied with and its basic rules willingly acted upon; and when infractions occur, stabilizing forces should exist that prevent further violations and tend to restore the arrangement."[13] In short, without general agreement on basic rules, society may perpetually exist in a "Hobbesian jungle," a state of noncooperation in which all are worse off.

What are the basic principles of social justice on which people in general can agree? Rawls argues that they are principles that will emerge from a setting in which people choose jointly a social con-

[10] Rawls, *Justice*, p. 4.

[11] Ibid., p. 11.

[12] James M. Buchanan, "Notes on Justice in Contract" (Working Paper CE 76-6-4, Center for the Study of Public Choice, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 1976), p. 25.

[13] Rawls, *Justice*, p. 6.

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tract that incorporates the principles of justice. In order for the principles to be "fair," the social-contract setting, according to Rawls, must be "fair" in the sense that no participant has an advantage in determining what those generally accepted principles of justice will be. If anyone has an advantage in determining the principles, the principles will be devised to correspond to the private interests of that individual and will lack the necessary general agreement that is so important in the Rawlsian theory for social stability. A "fair" contract setting is one into which all those who engage in social cooperation enter as equals. Further, they are all behind what Rawls calls "a veil of ignorance." Behind this veil "no one knows his place in society, his class position or social status, nor does any one know his fortune in the distribution of natural assets and abilities, his intelligence, strength, and the like, . . . [his] conception of the good or . . . [his] psychological propensities."[14] Without any knowledge of what their position in society will be, the participants are asked to devise rules for distributing basic rights in society and for distributing the society's benefits—the distribution of income. Rawls argues that two fundamental principles will emerge.

1. Each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others.

2. Social and economic inequalities are to be arranged so that they are both (a) reasonably expected to be to everyone's advantage, and (b) attached to positions and offices open to all.[15]

In the Rawlsian system of justice, inequalities in the distribution of wealth and income are just only when they are advantageous to everyone, especially the lower-income groups in society. Inequalities in the distribution are unjust when they are to the disadvantage of anyone, particularly to someone in the lower-income group. Rawls concludes that justice—a concept developed when people are in the initial contract state behind the veil of ignorance—requires that the income of the lower-income people in society be maximized. This is called the difference principle.

Many people who have read Rawls have concluded that the difference principle justifies a massive transfer of income from the rich to the poor because that is a redistribution scheme that even the rich would have accepted in the initial social-contract setting

[14]Ibid., p. 12.
[15]Ibid., p. 60.

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behind the veil of ignorance. The difference principle, therefore, justifies present governmental poverty programs and expansions of them. On the surface, a redistribution from the rich to the poor does appear to be consistent with the difference principle; the income of the poor is apparently raised by the design of the program. However, the transfers can be inconsistent with the goal of maximizing the incomes of the poor. Massive governmental programs to redistribute income can reduce the incentive of the relatively rich to work and invest in productive assets. To the extent that the productive efforts of the rich are beneficial to the poor – to the extent that the poor work with capital equipment – a transfer of income from the rich to the poor can conceivably make the poor worse off, at least over a period of time, as the poor gradually have fewer capital assets to aid them in production. The poor of today may be better off because they receive supplements to their income that are transferred by the government from the rich. However, the poor of the future may be worse off because the aggregate income of the society then will tend to be less because of reduced capital accumulation. In this event, the poor of the future will tend to earn less income (they are less productive because they have less capital to work with), and the government will have less income to transfer from the rich to the poor. Indeed, Robert Nozick, another Harvard philosophy professor, has written a book that contains a major attempt to counter Rawls's basic arguments.[16] A basic thesis of Nozick's work is that the rich, who may be rich because of greater natural or acquired talents and who are more productive, benefit the poor by providing them with mutually beneficial opportunities for trade at lower prices than would otherwise exist. It is certainly doubtful that the poor would be better off if the rich did not possess their greater productive skills.

Richard Wagner goes even further and contends that adoption of Rawls's framework for establishing justice in the distribution of income may result in fewer income transfers from the rich to the poor than we now have.[17] Behind the veil of ignorance, people do not know their relative income position; and in that state they will vote for income redistribution schemes that reflect their ignorance of their relative position and the fact that they have an equal chance of being in a high- or low-income bracket. When the veil of ignorance is lowered, however, they immediately become aware of

[16] Robert Nozick, *Anarchy, State, and Utopia* (New York: Basic Books, 1974).
[17] Richard W. Wagner, "Politics, Bureaucracy, and Budgetary Choice: The Brookings Budget for 1974," *Journal of Money, Credit and Banking* 6 (August 1974): 367–83.

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their station in life—their present and expected future income. Wagner argues that in a world in which people are aware of their relative income standing, people with above-average income will vote for less equalization than formerly; those with below-average income will vote for more governmental transfers and greater equalization in the income distribution.

Given the country's distribution of income, there are many more people who have incomes below the average than people who have incomes above the average because the relatively few people who have extremely high incomes pull the average income level upward to the point where more than 50 percent of the people have less than the average income. In the real world of practical politics, in which the veil of ignorance has been dropped and people know their relative position in the income distribution, Wagner argues that people will vote for more income transfer programs than they would adopt behind the veil of ignorance, where there is at least some possibility that they each will have an above-average income. Rawls's theory of justice is based on the supposition that once the principles of justice are accepted, people will adhere to them: They will not change the rules of the game once the veil of ignorance is dropped. In the real world of practical politics, however, this condition, too, may rarely hold, or it may hold only to a very limited extent and for a relatively short period of time. Wagner's suggestion is that by using Rawls's veil of ignorance as a frame of reference in establishing justice in the distribution of income, the present distribution of income, which includes significant governmental transfers, may be unjust in the sense that there is too much rather than too little in the way of income transfers from the rich to the poor.

Finally, it should be noted that the Rawlsian rationale for income redistribution does not necessarily imply that the poor in the United States would be, or should be, the recipients of large income transfers. The poor of this country are the relative rich of the world, and there is no inherent reason why the Rawlsian theory of justice should be applied only within the boundaries of the United States. Hence, if taken seriously, the Rawlsian theory suggests that income should be transferred from just about everyone in the United States to lower-income people in the rest of the world.

Although Rawls's theory provides a basis for thinking through the complex issues of justice in the distribution of income from a noneconomic point of reference, it adds little to our understanding of how much governmental aid should be given to the poor. The argument can, with appropriate blinders to counterarguments, be used to "justify" more or fewer income transfers.

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Entitlements and Redistribution[18]

Philosopher Robert Nozick has developed an "entitlements theory of distributive justice" that has caused philosophers and economists alike to reexamine the morality of taxation.[19] Succinctly, Nozick's theory justifies taxation only to the extent that the "minimal state," which is limited to establishing and enforcing property rights, is maintained. Taxation beyond that level can be construed as theft simply because it involves the type of coercion that a common thief exerts over his victim. Nozick writes:

> Taxation of earnings from labor is on a par with forced labor. Some persons find this claim obviously true; taking the earnings of *n* hours labor is like taking *n* hours for another's purpose. Others find the claim absurd. But even these, *if* they object to forced labor, would oppose forcing unemployed hippies to work for the benefit of the needy. And they would also object to forcing each person to work five extra hours each week for the benefit of the needy. But a system that takes five hours' wages in taxes does not seem to them like one that forces someone to work five hours, since it offers the person forced a wider range of choice in activities than does taxation in kind with the particular labor specified.... Furthermore, people envisage a system with something like a proportional tax on everything above the amount necessary for basic needs. Some think this does not force someone to work extra hours, since there is no fixed number of extra hours he is forced to work, and since he can avoid the tax entirely by earning only enough to cover his basic needs.... The fact that others intentionally intervene, in violation of a side constraint against aggression, to threaten force to limit the alternatives, in this case to paying taxes or (presumably the worse alternative) bare subsistence, makes the taxation system one of forced labor and distinguishes it from other cases of limited choices which are not forcings.[20]

Nozick goes on to point out the inevitable benefit that a person who likes leisure gains from an income tax system. A person who does not work because he likes leisure or likes the things that leisure time affords, does not earn a money income that is subject to taxation. He gets the benefits of nonwork but does not have to pay taxes on those benefits, simply because the benefits are in a nontaxable form – they are not money. On the other hand, the person who prefers goods – whether Shakespearean plays or suits of clothes – must give up leisure and the things that he can do with lei-

[18]This section is a revised version of a paper published by the author, "Entitlements and the Theft of Taxation," *Reason Papers,* Winter 1980.

[19]Robert Nozick, *Anarchy, State, and Utopia.*

[20]Ibid., p. 169.

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sure time in order to earn the necessary money to buy goods; the money income that is earned is taxable, whereas the leisure, as noted, is not. The person who likes goods must either work longer, because of taxes, in order to obtain a given amount of goods or forgo some of the goods he planned to buy. Nozick adds:

> Given this, if it would be illegitimate for a tax system to seize some of a man's leisure (forced labor) for the purpose of serving the needy, how can it be legitimate for a tax system to seize some of a man's goods for that purpose? Why should we treat the man whose happiness requires certain material goods or services differently from the man whose preferences and desires make such goods unnecessary for his happiness? Why should the man who prefers seeing a movie (and who has to earn money for a ticket) be open to the required call to aid the needy, while the person who prefers looking at a sunset (and hence need earn no extra money) is not? Indeed, isn't it surprising that redistributionists choose to ignore the man whose pleasures are so easily attainable without extra labor, while adding yet another burden to the poor unfortunate who must work for his pleasures?[21]

To Nozick taxation is characteristically similar to theft because the implied coercion causes one person to gain at the expense of another in much the same way that a mugging causes the mugger to gain at the expense of the person who is mugged.

In an important counterargument, J. R. Kearl attempts to dispute Nozick's argument: "I will suggest in this essay that private rights over property, which are essential to the efficient use of resources in a price-market system of allocation, are socially defined. If one then accepts Nozick's rationalization of the minimal state and its monopoly position in 'protection,' the minimal state has a claim to social output. Moreover, this claim would allow it to engage in redistributive activities other than those necessary for maintaining the enforcement apparatus of the minimal state. Hence, taxation is not theft and limited redistribution is not immoral."[22]

With the use of the numerical example relating to a newly-discovered fishing grounds, Kearl makes what is now a standard argument that under common property rights (in contrast to private property rights), individual producers will ignore the external effects of their own fishing activities on the productivity of other fish-

[21] Ibid., p. 170.

[22] J. R. Kearl, "Do Entitlements Imply That Taxation Is Theft?" *Philosophy and Public Affairs,* Fall 1977, p. 76. For additional comments, see also J. S. Coleman, "Rawls, Nozick and Educational Equality," *The Public Interest,* Spring 1976, pp. 121–28. Kearl's basic argument is also made in less detail by Kenneth J. Arrow in "A Case for Redistributing Income," *New Republic,* November 2, 1974, pp. 24–25.

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ermen: Individual fishermen will not consider the cost that they impose on each other and will therefore tend to "overproduce." When a fisherman goes out to fish in the "common fishing grounds," he must consider his expenses in labor and equipment in determining how long to fish and how many fish to catch. However, when the fishing grounds are common property, there is one cost that he is unlikely to consider, the increased difficulty that others will have in catching fish. Because some fish are caught, other fishermen will have more difficulty, incur greater costs, in catching their fish. In this way, the actions of any fisherman impose an *external cost* on others. If the individual fisherman had to incur the external cost, then he would catch fewer fish. Indeed, all fishermen would have higher cost structures, the price of fish would rise, and fewer fish would be caught and sold on the market.

When access to the fishing grounds is "free," as it is when the grounds are common property and when there are many fishermen, each individual fisherman will be unlikely to restrain his own fishing for two basic reasons. First, any one fisherman is unlikely to affect significantly the total quantity of fish on the market or the market price for fish. He simply isn't large enough when the group is large; therefore, there are no realized benefits to the *fisherman* for cutting back *his* production; the benefits are external, received by others who find fishing easier. Second, the individual fisherman can reason that if he cuts back his production, some other fisherman will probably come into the fishing grounds and take the fish that he does not take. If the stock of fish is being depleted by "overfishing," then the actions of the individual fisherman will not materially affect that outcome.

Furthermore, an individual fisherman is unlikely to do anything to contribute to the procreation of fish in the common grounds. If he does make any investment to increase the stock of fish, the cost of fishing to others will be reduced and others will tend to fish more, negating the "good intentions" of the individual who undertook the investment. From this line of reasoning, we can deduce that the common grounds will be "overfished" and nothing will be done by individual fishermen; all will tend to "free-ride" (or will attempt to "free-ride") on the efforts of others. If private rights (presumably, territorial rights) are assigned to individual fishermen, use of the fishing grounds will command a price, production will be reduced, and net social product will rise.

Kearl argues that because the collectivity must be involved in the assignment of rights or entitlements, the collectivity is productive and has a legitimate claim on the *increased* output of society: "We

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must acknowledge that a minimal state which does nothing more than define and protect private rights over property has a rightful claim to real output."[23] The state can, therefore, become more than "minimal" and remain moral; it can take a part of the greater social output from those who receive it and transfer it to those who are deemed in need or, perhaps, to those who may lose because of the initial assignment of private property rights.

Nozick and Kearl present sharply contrasting arguments on the morality of taxation. Taken in isolation, each argument seems to have a great deal of merit, partly because each does not deal directly with the issues the other raises. Nozick is concerned with the morality of the coercive power of government and how it is used in collecting taxes. However, Kearl points out a situation in which all parties can agree to distribute private property rights and to use some of the increase in social product to distribute to the "poor." Indeed, although Kearl does not do so, it can be pointed out that in order to get the agreement of the "poor" to the distribution of private property rights, those who get the rights and are "rich" may have to give up some of their income to the "poor" in the form of income grants or other welfare programs. The "rich" may not want to do that, but they may reason that they will be better off having private property and being "taxed" than giving up the private property with its greater income.[24]

Kearl's argument, however, has severe weaknesses. Although the contractarian perspective Kearl employs is useful to gain insight about the moral merit of taxation, his argument is for several reasons open to criticism. First, the argument assumes that property rights are defined and protected solely by the state. Hence, the implication is that the state has a significant claim on the social product, a claim that enables the state to expand beyond Nozick's minimum. That conclusion does not necessarily follow from Kearl's analysis. Property rights – i.e., socially recognized limits to individual and collective behavior – have frequently existed prior to formal government. Further, the property rights that have been recognized have been protected not by the state, but by individuals. Even when a state exists as an enforcer of property rights, those rights are only marginally protected by the state; they are overwhelmingly protected by individuals who have a private stake in

[23] Kearl, "Do Entitlements Imply That Taxation Is Theft?" p. 81.

[24] Geoffrey Brennen has argued that the rich may agree to some redistribution to ward off violence or the threat of violence by the poor to the rich and their property. See, "Pareto Desirable Redistribution: The Non-Altruistic Dimension," *Public Choice*, Spring 1973, pp. 43–68.

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the retention of those rights. A person's "right" to his household furnishings, for example, is typically far more dependent upon his willingness to install locks on the doors and windows of his house than it is on the state's police force. As Stewart Macaulay argues, the courts are usually employed by contracting parties only in cases where there is an unresolvable breakdown in a contractual relationship. Most disputes are resolved privately.[25] Other studies reveal that a very high percentage of business contracts are actually unenforceable in the courts. The contracts have force, however, because of the parties' private interests in a continuation of their mutually beneficial relationships. Granted, the state may add to the security of property and may thereby, as Kearl argues, enhance the social product. However, if we are to follow the spirit of Kearl's argument we must conclude that the state has a claim on only the *marginal increase* in the social product that results from the state's *marginal contribution* to the definition and protection of property.

Looked at in this way, there is no reason to believe that the state's claim to the social product is sufficient to justify the state's expanding beyond Nozick's minimum. True, the claim may be sufficient for the state to engage in redistributive activity, but Kearl's argument does not really demonstrate that this is the case. Given the monopoly position the state has in the definition and protection of property rights, we cannot be sure that the state will operate efficiently in carrying out its basic function and that the state's legitimate claim to the social product, if there is one, will enable it to do more than protect basic rights.

Second, Kearl implicitly assumes that the state is an agent that exists prior to, and is independent of, the people who wish to have property rights defined and protected; he assumes the state holds the rights before the initial distribution and that the state, not the property owners, is therefore "entitled" to a fraction or all of the expansion of the social product that results from the definition and enforcement of property rights. However, if the state is viewed as an agent of the people who collectively agree, in a social-contract setting, to define and protect property, then it does not necessarily follow that the state is "entitled" to any claim on social product: The people who take the necessary steps to have property defined and protected—who set up the state—are the ones responsible for what the state does. One can reasonably argue, therefore, that the property owners themselves have full claim to the fruits of the property they own.

[25]Stewart Macaulay, "Elegant Models, Empirical Pictures, and the Complexities of Contract," *Law and Society Review,* Winter 1977, pp. 507–28.

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Third, Kearl implicitly assumes that the state, as an independent agent, contracts with property owners for a portion or all of the increase in the social product that results from the state's definition and protection of property. There need not be any such contract. The state, as an independent agent, may act "out of the goodness of its heart," relinquishing all claim to the social product. If there were a contract, there would be no reason to believe that the contractual payments made to the state would be sufficient to allow the state to expand beyond Nozick's minimum. Indeed, Nozick seems to suggest that a social-contract conception of the state would and should hold the state to a minimal set of activities. If the state has a contract that gives it a claim to the social product, then property owners, even in Nozick's theory of justice, would have an obligation to make the payment. But, we must ask, where is the contract? The fact that the activities of the state are "productive," in the sense that they contribute to economic efficiency, does not, in and of itself, give the state entitlement to anything, much less a "rightful claim to real output" for purposes of income redistribution.

Fourth, Kearl implicitly assumes that taxation and the assignment of rights are separate and unrelated events. In organizing the criticisms presented here, assume, as does Kearl, that markets work reasonably well, if not perfectly, to reflect the value of the entitlements that have been granted. When markets work well, the value of the private property (or wealth) initially distributed will tend to be equal to the present value of the future income stream that can be received from the entitlements possessed. (People will simply base their bids for the property on how much income or benefits they can expect to receive from owning the property; at the limit in a competitive market people will bid prices that equal the expected value of the future income stream.) If, at the time of the initial distribution of property rights, the state gives clear notice of any plans to tax away a portion of the greater social output resulting from the assignment of rights, then no harm will be done: Redistributing future income will not be a problem. This is because the state has not fully distributed all the rights (or entitlements) that are available; it has not given people *full* claim to the existing fishing grounds, to use Kearl's example. The capitalized value of the rights that are distributed will reflect the claim of the state to the property's future income stream and will be less than it would have been in the absence of the state's claim or threat of taxation. What the state has not given, it cannot – overtly or covertly – take away.

Taxation may become, however, the practical equivalent of theft; it is certainly morally suspect when clear notice of the state's inten-

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tions is not given at the point of initial distribution of rights. For example, if at the time of the initial distribution the state does not assert its claim to the increase in social output and does not reveal its intentions to tax away a part of the increase in social output, then the state has effectively distributed all entitlements and has reserved nothing for itself. The capitalized value of the fishing grounds, or anything else subject to distribution, will reflect the full value of the rights that have been distributed: The capitalized value will be greater than it would have been in the case above in which the state asserts its residual claim.

As time goes by, the rights subject to the initial distribution will be traded for prices that approximate their capitalized values. If the state, at some future time, asserts a claim to the greater social product that results from the initial assignment of rights, then markets will adjust to what amounts to a redefinition and redistribution of rights. The market value of the assigned segments of, for example, the fishing grounds will fall, reflecting the lower net, after-tax income of the property. The people involved suffer a wealth loss: That which has been effectively given is taken away. Even if the people have adhered fully to the principle of justice in transfer, which they may have collectively accepted at the time of the initial distribution, the property is taken anyway, albeit covertly, in the market's reevaluation of the entitlements that remain. It is in this sense that taxation can take on characteristics of theft.

In addition to coercion, the act of theft can suggest total or partial deception or secrecy. If at the time of the initial distribution the state discloses its intentions to tax future income streams, either immediately or at some future point in time, then theft cannot be involved in taxation and no harm is done to future holders of the entitlements. Holders of property rights then know the full scope of the rights that they hold. The market price of the rights then reflects what the state discloses about its claim to future income. (The market price of the property will be lower the closer to the present the state plans to begin taxation.) People who buy property will pay only a price that reflects the present value of the future net, *after-tax* income stream. When taxation commences, entitlement holders will lose nothing in the way of wealth for which they have "justly" paid. The principle of justice in transfer will be fully operative.

The analysis in this section suggests that Kearl's argument is defective because it fails to account for the fact that future income streams are capitalized into the value of the rights that are subject to transfer. Furthermore, the analysis suggests that redistribution

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of wealth (from that which occurs at the time of initial distribution) can only occur when the intentions of the state to tax and redistribute income are, to one degree or another, kept secret. Taxation is objectionable to many simply because they prefer to keep that portion of the greater social output over which the state has an *announced* claim; the morality of state action is not *necessarily* at issue in such objections. However, taxation can become morally questionable and pejoratively equated with theft when the intentions of the state are not announced.

Furthermore, it should be understood, the state has reason, albeit weak, to hide its intentions to levy taxes. Taxes (other than lump-sum or perfectly general taxes), at levels that go beyond the function of the minimal state to provide protection of private property rights, dampen productive efforts and thereby keep the net social product from reaching the levels it would otherwise reach. This is one of Nozick's points. If the state assigns rights and at the same time announces its intentions to tax away a portion of the greater social product, then the social product, as Kearl suggests, can be greater than otherwise. The point suggested is that the social product will be even greater if the state's intentions to tax are kept secret. This is because the net marginal return to effort will be *perceived* to be greater than it actually is. When this happens, the state has not fully eliminated the problem of overproduction, which the assignment of private rights is intended to solve. Put bluntly, and less kindly, the state knows that by keeping its intentions to tax secret it will have more to steal.

Kearl concludes that "the state can, in fact, use its coercive apparatus to force some individuals to help others, since within the limits we have defined, it has been a contributor to the fruits of their labor."[26] The lesson of a "capitalized entitlements" approach to the question of taxation can be put succinctly: Although we may believe that governmentally defined and protected property rights contribute to economic efficiency, before we can comment on the morality of taxation we need to know more. We need to know exactly what rights are distributed initially and the taxation intentions (announced or unannounced) of the state.

Income Redistribution as a Public Good[27]

Poverty relief is said to be a public good: It benefits a large num-

[26] Kearl, "Do Entitlements Imply That Taxation Is Theft?" p. 81.

[27] This section is based on an argument developed by the author in detail in "A Note on the Construction of a Public Goods Demand Curve and the Theory of Income Redistribution," *Public Choice*, forthcoming.

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ber of people more or less simultaneously, and the benefits of poverty relief, if relief is provided, are received by people who may not have contributed to the aid of the poor. In this regard, poverty relief is viewed by many people, including economists, as a legitimate government activity. Even Milton Friedman has recognized the public benefits that come from poverty relief and has justified some government redistribution programs on the grounds that private charities may generate less aid to the needy than is socially desirable: "I am distressed by the sight of poverty; I am benefited by its alleviation; but I am benefited equally whether I or someone else pays for its alleviation; the benefits of other people's charity therefore partly accrue to me. To put it differently, we might all of us be willing to contribute to the relief of poverty, *provided* everyone else did. We might not be willing to contribute the same amount without such assurance."[28] The usual presumption in such arguments is that collectivization of charity through redistributive programs will lead to more relief for the poor.

To see this argument (and its weaknesses) more clearly, consider figure 1. It contains the demand curves of three people, A, B, and C, for giving loaves of bread to the poor. Those who use this argument usually assume that everyone who has a demand for giving to the poor is aware of, and benefits from, gifts made by all the others. That is, if A gives a loaf of bread to the poor, then A and B are aware of the gift, benefit from A's gift, and adjust their own giving accordingly. Hence, the three demand curves, D_a, D_b, and D_c, are added vertically; and the resulting public goods demand curve D_{a+b+c} reflects the collective social value of each loaf of bread given to the poor: It indicates how much they are collectively willing to pay for any given quantity of bread that is given to the poor; alternatively, it indicates how much they are collectively willing to buy at any given price for a loaf of bread.[29]

If the three people in our model act independently of one another (as opposed to collectively), and if they are each aware of the aid going to the poor, they will provide less charity to the poor than is "socially desirable." To see why, suppose that the cost of providing loaves of bread to the poor is constant, meaning that the marginal cost curve of bread for the poor is horizontal and that each loaf of bread can be purchased for a price of P_1. At that price, and without

[28]Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962), p. 191.

[29]For a more detailed discussion of the rationale for the construction of the public goods demand curve, see Richard B. McKenzie and Gordon Tullock, *Modern Political Economy,* chap. 3.

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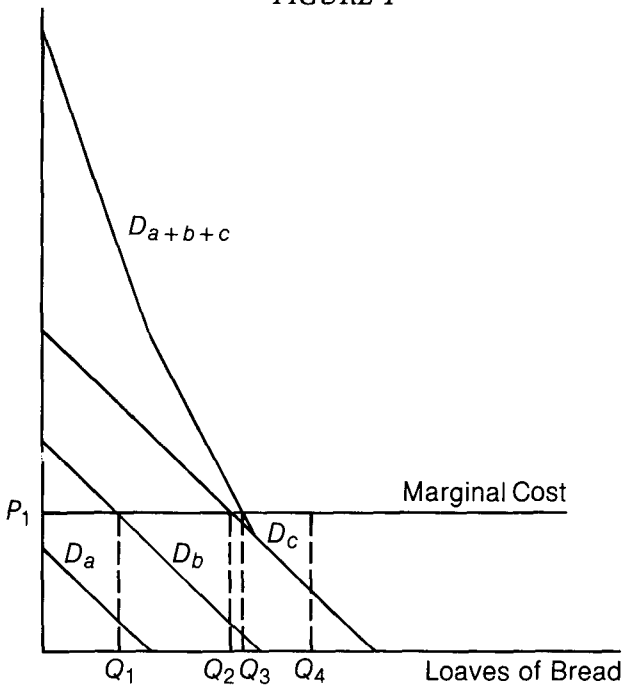
FIGURE 1



cost sharing, *A* will independently give nothing to the poor. The cost of giving the first loaf of bread to the poor is simply greater than the value *A* places on the first loaf given. How much *B* gives depends on what *C* does. If *C* has given nothing when *B* acts, then *B* will give up to the point that the price of bread is equal to the demand: He will give as much as Q_1. If *B* gives Q_1, *C* will extend the gift, giving up to the point that the price is equal to his, *C*'s, demand curve. Therefore, *C* will give the difference between Q_2 and Q_1. The total amount given will be Q_2. On the other hand, if *B* has given nothing when *C* makes his gifts, *C* will provide all of Q_2 and *B* (and *A*) will "free-ride" on the charitable inclinations of *C*. Notice, however, that the three of them are collectively willing to give as much as Q_3, if the price of bread is P_1 and if the three of them can find a way to share the cost of the bread that is given to the poor. From this line of argument proponents of income redistribution conclude that private charity is "suboptimal" and that government can increase social welfare by providing charity through the tax and redistributive system.

The argument is seriously flawed. First, it might be noted that poverty relief is characteristically different from many other public

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goods, such as police protection and national defense. If police protection is provided in a community, most people can be aware of the amount of police protection that is provided. People can see the patrol cars when they go through their neighborhoods. However, much private charity is provided almost secretly, often in a manner so others in the community will not know of the charity that is given. Many charitable donors do not want others to know of their efforts to help the poor, and many recipients of charity do not want others to know that they have been helped by others. Consequently, to use our example in figure 1, *A*, *B*, and *C* may not know how much each has privately given to the poor. If each does not know what the others are doing, then private charity can result in "too much" charity, given the standard framework for analysis of public goods. In figure 1, if *B* and *C* do not know how much each has given to the poor, then *B* will give Q_1 and *C* will give Q_2, the summation of which is Q_4, an amount beyond the social optimum for poverty relief. The standard argument suggests that collectivization of charity will lead to an expansion of relief to the poor. However, we have shown that if people do not know how much is being given privately to the poor, then collectivization of charity *can* lead to a contraction of charity for the poor: The quantity of bread given to the poor will fall from Q_4 under private giving to Q_3 under governmentally organized welfare programs. In short, the public goods argument for government redistribution programs does not necessarily lead to the conclusion that government will or should increase the transfer of income over and above privately established levels.

Second, if taken seriously, the public goods argument for government poverty relief programs implies that people other than the truly poor may, in order to achieve the optimum relief level, be recipients of governmental transfers. In the development of the market demand for private, as opposed to public, goods an assumption conventionally made is that the demands of market participants lie entirely above the horizontal axis. In other words, it is implicitly assumed that all relevant units of the goods in question give positive utility to buyers. If one is dealing with private goods, this assumption is entirely reasonable. Production costs—and therefore prices for private goods—are positive, and no sane person will extend his consumption beyond the point that price equals the demand curve, much less the point that the demand curve touches or extends downward and beyond the horizontal axis: Units of any good that give people negative utility are simply not relevant when the benefits (positive or negative) are received exclusively by the buyers.

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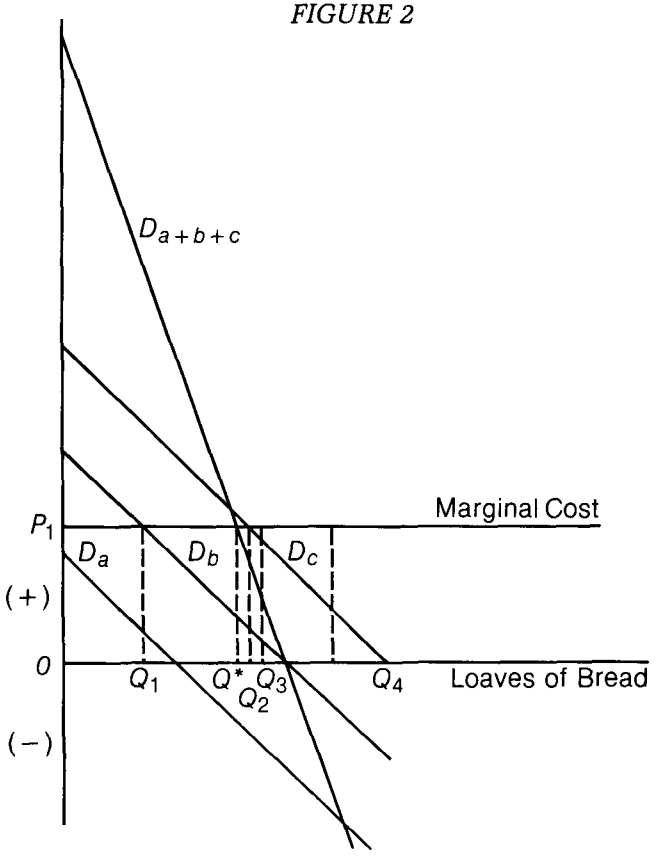
FIGURE 2



However, units of a public good affect, by definition, all people in the relevant group. The first few units of a public good may (but not necessarily will) give positive utility to all within the collectivity. If within the group there is considerable difference between demands of individuals, the collectivity can agree to provide a level of poverty relief that negatively affects some people in the community. It is easily observed that many people become very upset when government relief is given at some levels to some groups. In this regard, the conventional way in which public goods demand curves are derived (figure 1) is inaccurate.

Consider figure 2. *A*'s, *B*'s, and *C*'s demand curves in figure 1 are duplicated in this new graph. However, a major change is obvious: *A*'s and *B*'s demand curves have been extended into the negative quadrant, reflecting the implicit assumption that beyond some point the marginal value of an additional unit of poverty relief becomes negative for some people. Given these extensions, the con-

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struction of the public goods demand curve must be adjusted, as is done in the figure. The individual demand curves are still added vertically, but the slope of the public goods demand curve changes because of the negative values that are embedded in that portion of *A*'s and *B*'s demand curves below the horizontal axis. Given a marginal cost curve *MC*, the optimum output level is Q^*, the charity level at which the marginal cost curve and public goods demand curve intersect. Several points are worthy of special note. The new optimum charity level, Q^*, is less than the optimum charity level under the old construction in figure 1, Q_3. This new optimum charity level is actually less than the charity level that *C* would seek if he acted independently of the other two, meaning that collectivization of charity would lead to a reduction in the relief going to the poor. The important point, however, is that if advocates of public relief are consistent in the development of their conceptual framework and if there are people who attribute negative values to charity relief beyond some levels, as we suggest there are, then government must pay people whose demands are, within the relevant range of the social optimum, in the negative quadrant. Hence, as suggested above, the public goods argument leads to the conclusion that people other than the recipients of poverty relief programs can be, because of the existence of those relief programs, recipients of government transfers.

Third, the public goods argument for government redistribution programs becomes absurd when taken to its logical extreme. Government help for the poor is justified on the grounds that a large number of people want to see an improvement in the standard of living of the poor. The very same argument can be applied to large numbers of other groups, many of which may not be poor at all, and, indeed, the argument frequently has been applied to government aid programs for groups that are not poor. Agriculture programs are justified on the grounds that the concept of the family farm is an American tradition, a part of our culture and heritage, and should be preserved by government since virtually everyone benefits from the survival of the culture. Besides, so it is argued, virtually everyone is better off if farmers have a reasonably fair and stable level of income, which agriculture programs promote. Tariffs, special housing subsidies, and market-entry restrictions in professions have been justified, to one extent or another, by the "publicness" of the benefits received by the interest groups served by government. If we accept the public goods argument for poverty relief programs, it is difficult to argue against many other forms of government intervention in the market.

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Concluding Comments

During the last decade or so, American society has gone through an almost unnoticed political metamorphosis. As Marc Plattner has poignantly observed, American society entered the 1960s as a "welfare state" and emerged in the late 1970s as, to a significant extent, a "redistributive society."[30] Plattner suggests that in the welfare state the poor may be aided through government programs; however, a common political assumption is that people who *own* their incomes pay a share of *their* income in the form of taxation to government for *common* expenses such as poverty relief. In the welfare state, people perceive themselves as handing over to a government a part of what is presumed to be *theirs.*

In the redistributive society, on the other hand, individual incomes are presumed to be a part of a common income pool. Plattner writes: "The redistributionist view, by contrast [to the welfare view], implies that the income obtained by individuals is not their own but that of the society as a whole. Hence, in assessing the rate of tax on an individual the government is deciding not on how much of his own income it will require him to pay, but how much of the society's income it will allow him to keep. And if it allows its more productive citizens to keep a more than equal share of the national income, this is only because the government has decided that allocating unequal shares will promote a more efficient and more productive national economy—not because the more productive citizen is in any way *entitled* to a larger income."[31] The redistributive view of society is clearly and cleverly presented in Arthur Okun's *Equality and Efficiency: The Big Tradeoff.*[32]

The redistributive view has two important implications that must be noted. First, as Plattner has argued, it undermines the moral basis of individualism: "The moral and political tradition that animates liberal democracy is founded on the notion that the rights of the individual are prior to the claims of the society—indeed, that the protection of those individual rights is the very goal of political society."[33] Many redistributive government programs cannot be explained or rationalized very well, as we have shown, by conventional economic analysis. A major reason is that the concept of jus-

[30] Marc F. Plattner, "The Welfare State v. the Redistributive Society," *The Public Interest,* Spring 1979, pp. 28–48.

[31] Plattner, "The Welfare State."

[32] Arthur M. Okun, *Equality and Efficiency: The Big Trade-off* (Washington: The Brookings Institution, 1975).

[33] Plattner, "The Welfare State," p. 45.

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tice underlying traditional economic analysis is at odds with the concept of justice underlying many redistributive programs.

Second, the redistributive view of society makes the nation's income, to a significant extent, a common-access resource, as air, land, and water used to be. As tends to be true with all common-access resources, the competitive struggle for portions of this new common property should lead to abuse and misuse of the property. However, given the different perception of justice that underlies the redistributive society, the inefficiencies that result from the competitive struggle are of little or no concern to many redistributionists. For this reason, analysis of the kind presented in this paper will probably have little appeal for, or impact on, most modern redistributionists, who seem to have the upper hand in the development of long-term economic policy.

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THE PUBLIC AND PRIVATE INTEREST IN WILDERNESS PROTECTION

William C. Dennis

I am not one of those who finds his ideal summer cottage in Gary, Indiana, or who begins to feel uncomfortable if he strays more than fifty miles from Times Square. For the last ten years I have averaged at least sixty days a year in country most people would call wilderness—in Washington and Wyoming, in Alaska and Texas, in West Virginia and Tennessee. Over the years, I have wandered farther out, farther back, and higher up in search of ever wilder areas. I have shared the wilderness with my closest friends. I have learned some important lessons from my time in the wilds, and I have come to know something of the structure of nature from the point of view of both scientist and poet. I have enjoyed teaching about wilderness as a leader of month-long backpacking trips for students. In short, I am a great consumer of wild places. I want lots of space, and for me there is never enough.

My appreciation of wilderness comes from the mostly private benefits I have gained from life in the wilds, benefits not unlike the private benefits that others obtain from the London theater, a week on Cape Cod, or a cold beer in the backyard. Until recently in America, the proper ordering of such private benefits has not been a matter of public concern. People have been free to make their own choices with their own resources. But can we conceive of public benefits that could make wilderness preservation a major public concern?

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The author is an Associate Professor in the Department of History at Denison University, Granville, Ohio 43023.

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The nature of the public interest is difficult to determine.[1] Too often the words "public interest" are used as a rhetorical support for some policy that a partisan advocate believes would be beneficial to the country. The public interest may be used to disguise some private good in politically acceptable terms. Most people seem to believe that they have no trouble recognizing a public interest when they see one. At the same time, they accuse their opponents of promoting selfish rather than public interests. Strictly speaking, a policy in the public interest, at least in the long run, affects everyone in an equally beneficial manner, receives public support through a principle of unanimity, and has costs that are widely and equally shared. Since not all public policies fit such criteria, people may agree unanimously to certain decision-making rules that define a procedure for adopting necessary or useful public policies less than unanimously. But then the public interest is in the adoption of the rules, not in the particular public policies.[2]

A written constitution of a limited government such as ours provides one such set of decision-making rules. But the theory of limited government suggests that there are few public policies that fit this narrow definition of the public interest. National defense is one. A person may not like the quality or quantity of the defense he gets, but he gets it fairly equally, and if there are any benefits they are widely shared. The control of air pollution is another such policy, since air has no clear boundaries and it is necessary for all. Yet clean air is an intermediate public interest. All pollution cannot be eliminated; some people will have a greater preference for clean air than others; and, in the short run, some will be hurt by prohibitions on particular sources of pollution. Public health measures demonstrate a third problem with public interest questions. Does fluoridated water qualify as a public interest? All benefit if there are any benefits, and costs can be shared, yet many will oppose it as a violation of their right to choose. The pursuit of the public interest quickly turns up conflicts of interest within the body politic.

[1] My thinking on the problem of the public interest and wilderness protection stems from my own involvement in backpacking, climbing, and wilderness education and from two seminars I helped organize for the Liberty Fund, one in November 1978 on "The Public Interest," the other in May 1980 on "Wilderness, Environmental Protection, and Property Rights." In addition, I was an observer at a third seminar under joint sponsorship of the Liberty Fund and the Center for Political Economy and Natural Resources at Montana State University on "Historical and Philosophical Foundations of the Sagebrush Rebellion." These seminars provided a wonderful opportunity for a free exchange of ideas with a variety of scholars and experts.

[2] Brian M. Barry, "The Use and Abuse of 'The Public Interest,'" in *Nomos V, The Public Interest*, ed. Carl J. Friedrich (New York: Aldine-Atherton, 1962), p. 203.

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Despite these issues, near unanimity probably could be obtained for the proposition that the government has a responsibility to promote public health to some degree.

What, then, is the possibility that wilderness protection also fits this definition of the public interest? If it does not fit, what are the implications for public policy in the area of wilderness preservation?

One possible argument in favor of wilderness preservation is aesthetic nationalism. Edmund Burke tells us that for a nation to be loved it ought to be lovely, that it ought to be capable of inspiring love. Certainly the great physical beauty of this country has been one of its most admired features even before the earliest colonial settlements. Over the centuries, Americans have had a long and heartfelt love affair with this continent. Often the wildness of the country bred more terror than love, but at least since the middle of the nineteenth century wilderness has provided for many persons a substantial portion of the loveliness Burke spoke of and has strengthened their affection for their country.[3] As the British naturalist James Fisher wrote in *Wild America* of the Americans and their land, "Never have I seen such wonders or met landlords so worthy of their land. They have had, and still have, the power to ravage it; and instead have made it a garden."[4]

Nonetheless, beauty is largely in the eyes of the beholder. Not all Americans feel comfortable with wilderness. Not all people mean the same thing by wilderness. And Fisher's managed garden is not exactly primitive wilderness, even though it may be well worth having. The inculcation of national loyalty alone is surely an insufficient ground for extensive public wilderness protection when the goals of preserving "purple mountains," producing "amber waves of grain," and renewing "alabaster cities" may be mutually exclusive public goods. Economic growth, full employment, safe streets, good schools, pleasant suburbs, and wholesome food are at least as important as wilderness if a country is to be loved and lovely.

Wilderness preservationists are not fond of this public interest argument. They usually prefer a more universalist position. One such argument views man and his works as corrupt in comparison with the perfection of God and His world. To keep in touch with God and man's better nature, man needs to seek refuge in the

[3]The classic account of this development is found in Roderick Nash, *Wilderness and the American Mind* (New Haven: Yale University Press, 1967).

[4]Roger Tory Peterson and James Fisher, *Wild America* (Cambridge, Mass.: Houghton Mifflin, 1955), p. 418.

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wilderness. A variation on this theme reminds us that God requires man to serve as steward of His great works. This argument may well provide a reason for a particular person to seek ways to preserve tracts of wilderness, but the personal vision of a theological argument does not provide a good platform for the defense of the public interest. Individuals may make judgments on the basis of their religious beliefs, but it will be difficult to convince others who do not share their vision. A secular version of the theological argument finds in the wilderness some supreme good above all other human needs and interests. This argument persuades only the true believer and will win few new friends for the cause, for it boils down to little more than one person's preference at odds with another's.

A far better universalist position maintains that we must recognize that wilderness is an irreplaceable resource, and we must protect what we still have. Future generations will thank us for passing on this precious resource, not just for aesthetic reasons but because civilization itself depends on a proper mix of plants, animals, microorganisms, and water, air, and soil resources in an intricate and, as yet, not fully understood ecological balance. To tamper with this balance without understanding how it affects us will surely produce untold adverse consequences for mankind. This argument is certainly correct in part, yet it is flawed also. For one thing, the wild environment is not that delicate. If left alone it would reassert itself, no doubt in a modified form, rather quickly. Wild grasses return to the Thar Desert of India, a desert probably created by overgrazing of the land three thousand years ago, within a few years once grazing stops.[5] Any suburban lawn, left unmowed, will produce an amazing array of wildflowers. Without man, grass would grow again in the streets of Los Angeles within a frighteningly short time. Kipling put it succinctly in "Mowgli's Song against People":

> I will let loose against you the fleet-footed vines–
> I will call in the Jungle to stamp out your lines!

Landscapes change naturally and constantly through erosion, wind, earthquakes, volcanoes, glaciers, climatic shifts, and earthplate movements. Species, landforms, and continents come and go in rapid succession as measured in anything but human time. When we say that this is the only environment we have, we might more accurately state that this is the only environment we feel comfortable in.

[5]Reid A. Bryson and Thomas J. Murray, *Climates of Hunger: Mankind and the World's Changing Weather* (Madison: University of Wisconsin Press, 1977), pp. 107–14.

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Men are highly adaptable to different times, places, conditions, and environments. Through technology they can often modify the environment to suit themselves and their ideas of a good life. Wilderness is only one of the goods man desires. In pursuit of other goods, man has been destroying and modifying wilderness for thousands of years. Entire civilizations may have been destroyed by inadvertent environmental modifications. Yet more often than not, man has improved on the wilds for his own purposes. What is different today in man's relation to the wilderness is that there are so many more of us that the modification of the environment proceeds with great rapidity, and the chances for major mistakes in environmental engineering increase accordingly. Whatever we do about wilderness, population stability is a desirable goal and will have to come at some point. Yet the problem of population growth is different from the problem of wilderness protection. However many billions of persons turn up on this planet, they will have to be put somewhere. The more of them there are, the less wilderness there will be, whatever public policies are adopted. Finally, there is no sure way to know ahead of time whether man's effect on the environment works for good or ill, even for man. There are clearly trade-offs, but we really only know what these are over the short run. There will probably be a demand for both development and wilderness, but we do not know what the desired mix of these two goods, both in quantity and quality, will be.

A third group of public interest arguments in wilderness preservation is more persuasive than those in the universalist category. These arguments concede that wilderness is only one of many competing goods, yet wilderness protection is still worthy of public concern. Wilderness is useful as a laboratory for scientific research into the nature of the physical universe. New medicinal compounds, new strains of food crops, and new products for high-technology industry wait to be discovered if we do not destroy the wild areas of the earth through slash-and-burn agriculture, logging, desertification, and acid rain. These are strong arguments indeed. But we do not know how much wilderness is enough for these uses, and we do know that competing uses of wild lands also contribute to a higher standard of living through research, synthetic technology, and agriculture. These arguments suggest that we should be careful with the wilderness we have, and we should learn to evaluate it properly when we compare wilderness with development. But these are not arguments that in and of themselves support a public policy of wilderness protection.

One true public interest is that wilderness preservation encour-

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ages the cultivation of a social ethic that increases the chances of human survival on this planet through the development of human values. If we are unable or unwilling to care for the wilds, to appreciate the beauty of untouched places, to marvel at the intricate relationships of the natural world, to learn to love other living things, to treat all life as precious and worthy of respect, is it not likely that we will come to undervalue human life as well? If we act as if our wild resources exist merely for human exploitation and manipulation, then we will come to treat humans as equally exploitable. The cultivation of a respectful attitude toward life is a difficult task. Learning to love the wilds may well help us learn to love ourselves.

A final, more limited argument holds that wilderness provides "near"-public goods.[6] Within certain constraints, these goods are available to all, though some will benefit more than others. This category includes aesthetic views, recreational areas, psychological goods (such as the pleasure of living in a world where wolves still roam), and "banks" where resources may be stored for future use. The value of these goods should be considered in the formulation of public policy, but they are not true public goods. Some will find wilderness vistas frightening instead of elevating; others will dislike outdoor sports; still others may benefit more by consuming resources now rather than by holding them for the long run; some will value attractive views only if they can be seen without much effort; some will find the view spoiled if others are around. Goods of this sort will be provided for in a more equitable fashion if those who benefit from them freight the bill. This is the way we handle other such goods: opera, fine restaurants, trips to the ballpark, and shopping centers.

So far, a limited but not overwhelming case for a public interest in wilderness protection has been presented. But a successful democracy depends on a determination on all our parts not to interfere with the values of others and not to insist that others see everything our way.[7] The best public interest argument is largely a matter of values. In a diverse democratic society questions of value are often the most difficult to deal with in a public forum. Other means exist

[6]For a discussion of near-public goods, see James D. Gwartney and Richard Stroup, *Economics: Private and Public Choice* (New York: Academic Press, 1980), pp. 700–701. "Although few commodities are pure public goods, a much larger set of goods is jointly consumed even though it is feasible to exclude non-paying customers."

[7]This important point is worthy of a separate paper. I touch on it in several of my writings, including two unpublished essays, "The Conditions of Freedom" and "The Founding Fathers and the Public Interest." See also William Dennis, "Kirk, Hartz, Rossiter and the Conservative Tradition in America," *Modern Age* (Spring 1980), pp. 161–67.

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to take care of public interest questions. Often we turn to them when dealing with questions of value. Churches, voluntary associations, and nonprofit corporations are particularly useful agencies that promote the public good through noncoercive means. If even in this best case problems exist in trying to provide wilderness protection through public means, advocates of wilderness preservation will not strengthen their case if they depend too heavily on public interest sorts of arguments.[8]

Suppose, however, that despite the arguments above we find a general public interest in wilderness protection. It will still be difficult to determine just what that interest is. The key problem is how to determine the proper mix between wilderness and nonwilderness uses of public wild lands. In obvious conflict with wilderness preservation is our demand for new sources of scarce resources: mining of uranium, coal, and molybdenum; drilling for oil and gas; commercial development of the timber crop; demand for grazing land as the price of beef rises; rights-of-way for transportation routes; places for a growing population to live; increased need for recreation sites. But even the recreational demands bring conflicts. How will the public interest best be served when it comes to providing tracts for those who wish to bring their campers and off-road vehicles into the wilds? Where should motorboats be permitted and where should only canoes be allowed? What about hunters and fishermen and horsemen? What about developed public campgrounds and rustic campsites? All of these uses are in high demand. There is no one group whose demands are inherently superior to the rest.

Even within the group of true wilderness users there are differences of opinion. Wilderness, it turns out, is largely a psychological good. What is wilderness to one is crowded civilization to another. The family backpacker, the naturalist, the mountaineer, and the commercial outfitter each has a different and often competing interest in the wilderness. Should we have trail improvements? Do we need new switchbacks? Must each rivulet or run be bridged by a structure designed by an architect? What is the correct public policy regarding grizzly bears or wild horses? If it were my wilderness I would leave out bridges and trail signs and eliminate most trail crews. Trails would end at timberline. There would be no paved access roads. My favorite USGS quadrangle maps are those that state in the lower right-hand corner, "No roads or trails in this

[8]Edgar Bodenheimer, "Prolegomena to a Theory of the Public Interest," *Nomos V*, pp. 210-11, 212.

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area." But not many people are interested in this sort of wilderness. It is certainly not the version of wilderness favored by Park Service or Forest Service administrators. But who is to say which version of wilderness is best, which version is more in harmony with the public interest?

Suppose, however, that an equitable mixture can be found among these competing versions. How, then, do we determine the rules under which our wilds are to be administered? What user fees should be charged? Should campground sites and backcountry permits be rationed by queuing or by reservations?[9] What is the backpacking capacity of the Wind River Range? Does that capacity change depending on the type of backpacker admitted? If so, should examinations be required before admission? Should guide services be licensed? Must professional guides receive national certification? Should certain areas be closed to rock climbing? Should climbing activities be regulated? Who should pay for rescues? Under what circumstances will rescue be permitted? Does the hiker assume the risk in grizzly country, should the bear population be "managed," or should grizzly areas be closed? These are real questions currently discussed in the journals and at the meetings of outdoors users and managers. As the perceived need for rules multiplies, the rules will surely be determined more and more at the convenience of administrators and will stray even further from any conception of the public interest.

For example, Frank C. Craighead, Jr., argues that the Yellowstone Park authorities established their policy on grizzly bears to fit their preconceptions of how bears were supposed to act in the park in opposition to his recommendations based on a long study of the actual habits of the grizzly.[10] A few years ago the Forest Service in Pinedale, Wyoming, decided to limit commercial use of the Bridger-Teton Wilderness to about 12,000 man-days in July and August. Most permits were immediately issued to large, regulated, and established outfitters, in particular the National Outdoor Leadership School. Permits for small parties became virtually unavailable. Even though I had hiked hundreds of miles in the Wind River Range and am trained in wilderness education, I was unable to take a small group of college students into the mountains if I

[9]George H. Stankey and John Baden, "Rationing Wilderness Use: Methods, Problems, and Guidelines" (Department of Agriculture, Forest Service, Odgen, Utah, 1977), discuss the implications of five different rationing systems: reservations, lottery, queuing, merit, and price.

[10]Frank C. Craighead, Jr., *Track of the Grizzly* (San Francisco: Sierra Club, 1979), pp. 191–230.

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were paid any fee for my services. Yet troops of Boy Scouts with volunteer leaders and hatchets and knives and fire scars and other unsound practices went unregulated. Whose interest was furthered and whose was hindered by this policy?[11]

Rules and regulations pose a further difficulty. As John Baden has shown, different rules benefit different sorts of people.[12] Some can pay user fees; others can make reservations; still others are willing to stand in line and wait. The wealthy can hire attorneys, and corporations can mount lobbying efforts. Why should public policy accommodate one group over another? Generally speaking, whatever the rules, direct users of wilderness will benefit more than nonusers. The wealthy, the educated, and the young are the primary beneficiaries of wilderness preservation by the government, yet they pay far less than their share of the costs. When the opportunity costs of nondevelopment are considered, this economic disparity is even more marked. So questions of equity pose still further problems for the public interest in wilderness preservation.

These wilderness goods are of interest only because they are of value to mankind. Different persons have different ideas on what wilderness is and how much of it is desirable. Too much wilderness is clearly as inimical to man as too little. Persons of good will can and do disagree as to what the public policy toward wilderness should be.

In any situation of conflicting claims, interests, and judgments, two methods can be used to settle the differences. One can develop a system of property rights and entitlements in which individual owners decide on resource uses and in which market transactions set price levels so that the value of alternative uses and personal preferences can be compared using a common standard, or one can turn to the political arena where ultimately the "might makes right" argument of the numerical majority will prevail. Of course, in a democratic society we decide on many policies that are not of a public interest nature through the give and take of democratic exchange. For example, should we spend a few billion more or a few billion less on public education? Should a military installation be

[11] Another good example of government mistakes in wilderness protection can be found in John Baden and Richard L. Stroup, "The Environmental Costs of Government Action," *Policy Review* 4 (Spring 1978): 23–36.

[12] John Baden, "Neospartan Hedonists, Adult Toy Aficionados, and the Rationing of Public Lands," in *Managing the Commons,* ed. Garrett Hardin and John Baden (San Francisco: W. H. Freeman, 1977), pp. 241–51. I have also been influenced by Richard Stroup and John Baden, "Property Rights and Natural Resource Management," *Literature of Liberty* 2 (September-December 1979): 5–44.

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located in Texas or Georgia? Should marginal tax brackets be adjusted up or down? There is no clearly right or wrong answer to such questions. They are matters of merely prudential concern, and the questions are usually solved through political negotiation and compromise. Underlying each of these questions, however, is a public interest argument: Should there be public education? What sort of national defense do we need? What is the nature of just taxation?

Many persons seem to see nothing wrong with prudential political action on wilderness protection. They argue that there will be no wilderness protection unless the government does it and that the political process will at least produce some wilderness protection, however inadequate. Besides, the government has always done it, and some questions are just not worth discussing. This is a difficult argument to deal with because the people who make it are usually not accustomed to approaching public policy according to first principles. They may grumble and complain about particular results, but they are rarely willing to consider that something is wrong with their fundamental assumptions. I have already argued that there are no compelling public interest arguments in favor of predominantly public protection of wilderness. But for those unwilling to agree with these conclusions, there are also problems with the argument of prudential politics.

Past governmental actions have more often than not destroyed America's wild areas. Only since the 1960s have wilderness advocates won many important political battles in their contests with economic and recreational developers of public wild lands. Government grazing and timbering programs have favored certain groups of ranchers and loggers. The scenic forest highway program has ruined hundreds of miles of wild stream valleys. Government dams for flood control, water storage, and recreation are particularly notorious examples of public destruction of wild areas. Until recently, most national park superintendents ran their establishments as if they were the managers of Disneyland, looking on ever larger park admissions and more recreational development as signs of managerial success. In the interests of public safety and convenience, our parks are becoming a bureaucratic maze of rules and regulations. One need only leaf through the publications of the various wilderness groups to see that the preservationists themselves are increasingly sensitive to the damage that government does to wilderness through its various actions and inactions: open-pit mines, mine tailing ponds, subsurface leases, oil drilling, timber chaining, access roads, overgrazing, off-road vehicle recreation

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areas, irrigation dams. All these uses are routinely condemned in *The Living Wilderness, Audubon,* and *National Wildlife.*[13] As Aldo Leopold wrote long ago, "Generally speaking, it is not timber, and certainly not agriculture, which is causing the decimation of wilderness areas, but rather the desire to attract tourists."[14] One need only compare the wild nature of the privately held Big Bend Ranch with the more developed aspect of the adjacent Big Bend National Park in remote Brewster County, Texas, to see the truth in Leopold's lament. Only a few years ago the North Fork Valley in West Virginia was the site of mountain farms, wild ridges, and free-flowing rivers. Now Forest Service development is bringing to it visitor centers, campgrounds, road construction, fancy footbridges, and, according to plans, dams and recreation lakes. Only lack of funds has retarded the development of this area. Visitor-day use in national forest wilderness areas has increased twenty times since the 1930s and more than doubled since 1964. Should such rapid increase continue, there will be little wilderness left for anyone in the year 2000.[15]

A more subtle point may be made. The use of political solutions to obtain an end that is not truly in the public interest weakens the case of the preservationist. In the political arena, people attempt to shift costs to others for projects that primarily benefit themselves. They engage in "self-interest redistribution" to improve their position through governmental action. Gwartney and Stroup write that this process "is quite common, but it is almost never called redistribution. . . . Yet, in each case, it is more than a happy coincidence that the desired program also redistributes income to those making the requests."[16] But the entire force of the preservationist argument stems from the insistence that wilderness is a good that provides benefits for everyone and that all should desire. The more people the perservationists can convince, the more resources they will be able to bring to the cause of wilderness protection. But preserva-

[13] Four examples from recent issues of *The Living Wilderness* are Dan Whipple, "The Oil Threat to Bridger Teton" (October-December 1977), pp. 5–8; Charles H. Callison, "It's High Time to Scuttle the Giveaway Mining Law" (January-March 1979), pp. 4–9; Dave Foreman, "ORVs Threaten a Wild Canyon" (September 1979), pp. 14–18; and Philip Hyde, "A Lament for Glen Canyon" (September 1980), pp. 21–23.

[14] Aldo Leopold, "Wilderness as a Form of Land Use," *The Living Wilderness* (December 1979), pp. 9–13 (originally published in 1925 in the *Journal of Land Use and Public Utility Economics*). Roderick Nash, in his revised edition of *Wilderness and the American Mind* (New Haven, Conn.: Yale University Press, 1973), discusses this problem at length in his epilogue, "The Irony of Victory."

[15] *The Living Wilderness* (September 1980), pp. 44, 46.

[16] Gwartney and Stroup, *Economics,* p. 721.

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tionists who claim to be public benefactors and then transform themselves into another typical interest group at the public trough will lose their claim to moral superiority and thereby weaken the force of their own best argument.[17]

The political control of the wilderness may prove counterproductive as well. Powerful, competing interests will engage in unrelenting political warfare for influence on governmental bureaucracies and control over public resources. The wonder is that the preservationists have won any battles at all. Population pressure, popular demand for economic growth, problems of resource depletion and allocation, and the growth of development-oriented governmental agencies like the Department of Energy make it likely that future political decisions will on net destroy wilderness rather than preserve it. Surely a nation of 300 million people in the year 2020, while placing a higher value on wilderness preservation, will value alternative uses of wild lands even more. The Overthrust Belt will be developed, the Gates of the Arctic will be explored for oil, and coal will be stripped from BLM lands. The organized preservationists may well wish they had placed more of their resources in purchasing wild lands than in fighting political battles, for with ownership comes more effective control.

The private ownership of wilderness would improve the moral consistency of the preservationist argument as well as demonstrate a true dedication to wilderness values. We all know of the good feelings we get when we commit some of our own resources to a cause in which we believe. Those of us who own real estate know that the demands, sacrifices, and delights of ownership make us appreciate more fully our homes, our businesses, our ranches, and our farms. Much of the moral strength of America has depended on the widespread ownership of property. The preservationist movement should call on this strength in its own behalf. Once preservationists own substantial tracts of wild lands, they can speak with more authority about how wilderness should be preserved.

In a democratic society a public solution to wilderness protection will prove feasible only if there is a broad consensus on the details of public policy or if there are plenty of resources to fulfill the demands of different and competing interest groups without too much contention among them. Neither of these conditions now exists in regard to wilderness policy. As the nation grows more

[17]John Baden, Randy Simmons, and Rodney D. Fort, "Environmentalists and Self-Interest: How Pure Are Those Who Desire the Pristine?" in *Earth Day Reconsidered*, ed. John Baden (Washington, D.C.: Heritage Foundation, 1980), pp. 13–29.

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crowded and more complex, the basis for consensus lessens and the possibility of conflict grows. To resolve these conflicts we need to pay more attention in the future to the establishment of a system of property rights as the foundation of wilderness protection. Without more nongovernmental solutions, the country is likely to find itself confronted with the common tragedy of wilderness depletion rather than the common good of preservation. Public policy may well work against the public good.

Granted the force of the above arguments, do private property means exist to support wilderness preservation? Past errors will make an ideal solution impossible; yet a gradual movement toward minimal governmental involvement in wilderness protection is not only feasible, it might also serve to reduce the hostility to private property solutions by groups that benefit from current policies. What is needed is a strategy of gradualism to change certain public policies that inhibit private ownership, to modify the rules of public land use so that resource users bear a greater proportion of the costs, and to try out a different combination of public and private ownership of wild land.

Current tax policy inhibits the private ownership of wild land. Taxes should be reduced to increase the resources left in private lands for private purposes. Taxes on real estate and inheritances decrease the ability of private owners to hold land in a wild condition. Special tax exemptions should be extended to the owners of small tracts of wild lands, such as pastures, woodlots, creek bottoms, and backyards. These micro-wilderness areas are wonderful natural preserves for insects, small vertebrates, and native plants. Lower corporate and personal income taxes would make for-profit ownership of wild areas more feasible.

Congress should decree that the annual cost of the ownership of public wild lands should be borne by the primary users of that land. Surely there is something improper about a policy that provides virtually free vacations to people with sufficient time and money while others must stay home to work to pay the taxes to provide these benefits. According to the Wyoming Tourist Bureau, the average visitor to Wyoming in the summer of 1980 spent over forty dollars a day on vacation expenses. Yet a mere ten dollars buys an annual Golden Eagle permit to all our national parks for a carload of travelers. Colorado Outward Bound now charges over six hundred dollars (plus transportation to Denver) for its fine twenty-one-day programs that take place almost completely on public lands; but Outward Bound probably pays no more than fifteen cents per person per day for the use of public property. Often the costs of col-

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lecting fees exceed the value of the fees themselves.

User fees accomplish a number of desirable ends not found in other rationing systems. Money is a neutral medium that allows people to compare, so to speak, apples and oranges. Both preservationists and loggers claim that access to wild lands is valuable, but only the logger has to demonstrate with his own resources what that value means to him. Fees ease the public burden, transfer the cost to the prime beneficiaries, and pave the way for a transition to private ownership. Backpackers and preservationists may well come to appreciate wild lands more fully if they have to pay for them. People do not carefully evaluate goods that appear to be free.

Other techniques to raise money from public lands ought to be explored. Full-cost pricing of timber and grazing operations might make some of these ventures unprofitable. Long-term leasing arrangements for recreational development companies as well as ranchers and miners would partially privatize the wilderness and thereby provide more of an incentive to preserve the resources and to develop fully the economic potential of the land. Limited term rights could be auctioned to the highest bidder with restrictive covenants defining the bounds of appropriate exploitation. Public land that cannot bear its own costs should be sold outright for whatever it will bring.

Selling the public land does pose some problems. Many feel that direct competitive sales would mean that only large corporations insensitive to the value of wilderness would end up with public lands. There is some truth in this charge. If wilderness organizations had invested in land earlier, they would now find it easier to compete with for-profit organizations. The simplest way to deal with this problem is for the government to make up for lost time by giving away parcels of wild lands to different preservationist groups, again perhaps with restrictive covenants.[18] The government frequently has disposed of its land without charge in the past to homesteaders, to schools, and to railroads. Gradual sale of other lands over the next twenty years or so would give the preservationists an opportunity to organize, to raise funds, and to compete in the marketplace.

We should not underestimate the economic power of such groups as National Outdoor Leadership School, Ducks Unlimited, the Ap-

[18]John Baden and Richard Stroup, "Priceless Wilderness: A Paradigm Case of Rent Seeking" (Paper prepared for a Liberty Fund Conference on "The Political Economy of the Transfer Society," Montana State University, Bozeman, September 1980), pp. 18–21.

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palachian Trail Conference, the Sierra Club, the Great Lakes College Association, or Montana State University. These organizations might be worthy owners of wild lands. Various for-profit or nonprofit organizations already find it in their interest to preserve wilderness: for example, the Grand Teton Lodge Company, Big Sky Resorts, *Backpacker Magazine,* and Camp Trail Pack Company (now owned by Johnson Wax). Regional associations of dude ranches and commercial outfitters, alone or in cooperation, could work out private arrangements for wilderness preservation. If property rights were taken seriously, one might not have to buy every wild space in order to protect vast areas. Purchase of a strategic access valley might protect the remote backcountry and mountain peaks. Ownership of water rights in a desert area might make further commercial development impossible. The Nature Conservancy does an especially good job with this technique, though, unfortunately, it often turns its purchases over to public authorities.[19]

One great advantage of privatization is that it frees the genius of private individuals to come up with new and unexpected ways of protecting wilderness. As Gordon Tullock tells us, "The level of efficiency of government action is apt to be low, and the possibility of damage through erratic, ill-informed decisions is great."[20] With government solutions we get only a few management options, but with private ownership people will tend to concentrate their efforts where they have comparative advantages. When those with the most interest become important owners of wilderness, creative new policies should result.[21]

Private owners will be able to raise money without eroding the wilderness character of the land. The technique of excess taking could be used. Owners could purchase lands peripheral to their wild areas and use them for commercial development. In Estes Park, Colo., Jackson,Wyo., and Gatlinburg, Tenn., such developments add considerably to the economic attractiveness of nearby wilderness areas. Another source of income could be summer cot-

[19]The July-August 1980 issue of *The Nature Conservancy News* lists sixteen new projects. Seven of these were turned over to various governmental units, seven remain in private hands, and two appear to have joint public-private management.

[20]Gordon Tullock, "The Social Costs of Reducing Social Cost," in *Managing the Commons,* p. 155.

[21]Armen A. Alchian, *Economic Forces at Work* (Indianapolis: Liberty Press, 1977), p. 143. Other benefits of private ownership are discussed in Harold Demsetz, "Toward a Theory of Property Rights," *American Economic Review* 57 (May 1967): 347–59; and James A. Sadowsky, "Private Property and Collective Ownership," in *Property Rights in a Humane Economy,* ed. Samuel L. Blumenfeld (La Salle, Ill.: Open Court, 1974), pp. 83–100.

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tages, condominiums, and ski lifts such as those found at Crested Butte and Aspen, and on more remote Forest Service lands. Animal, vegetable, and mineral resources would be another fruitful source of income. Many of these resources can be developed with little adverse effect on the wilderness, especially since rising prices make greater precautions economically more feasible. Hunters and fishermen already spend huge sums on their pastimes. Once they become accustomed to paying for their benefits, backpackers should be willing to pay for access to the backcountry with the guarantee that their fellow foot-travelers are scattered thinly throughout the wilds. Particularly fragile or scenic areas might command a high price from a wealthy patron if he were given exclusive rights to it on some limited basis.

On the other hand, lands with only a marginal wild character could be exploited for their nonwilderness resources and then reclaimed for agricultural, recreational, and wildlife conservation purposes. Two good examples of this policy are the Ohio Power Company lands in southeastern Ohio and the Meadowlark Farm development of the Ayrshire Collieries in Indiana, Illinois, and Kentucky. In all of these cases, if rights and entitlements are restructured so that entrepreneurs can capture the economic benefits of ownership, then the incentives for private management of wilderness will be dramatically increased.

Destructive population pressures on wild areas can be alleviated by expanding nonwilderness outdoor recreation areas, such as camping parks and artificial lakes built close to population centers. Wilderness corporations might well diversify into these businesses, using profits gained for the preservation of wilderness elsewhere. Edwin G. Dolan has pointed out that once wilderness organizations decide to become profit-making corporations, the bond markets and other financial services would be open to them.[22]

Finally, let me suggest four tasks for immediate action:

First, Alaska is still both wild and federally owned. It should not be locked away from private ownership. Alaskan homesteading should be extended to much of the land now under consideration for wilderness preservation. The Alaskans love their land and live out-of-doors a good bit of the year. They would find ways both to

[22] Edwin G. Dolan, "Why Not Sell the National Parks?" *National Review* (April 6, 1971), pp. 362–65. Dolan first suggested to me a private property approach to wilderness protection. His other writing in this area includes *TANSTAAFL: The Economic Strategy for Environmental Crisis* (New York: Holt, Rinehart & Winston, 1971); and "Environmental Policy and Property Rights," in *Property Rights in a Humane Economy*, pp. 209–24.

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develop Alaska and to preserve much of its wildness. A thoughtful Alaskan policy can allow us to have wild areas and resources and a freer society as well.

Second, the conclusions of this paper may seem strange, radical, and impossible. Perhaps so. But why not try some of these ideas to find out how practical they are. The Department of Agriculture, for example, in cooperation with an independent evaluation agency, could establish a pilot project in which a federal wild area is turned over to a commercial operation to see how a profit-maximizing entrepreneur might actually administer it. We try pilot projects in many areas of public policy. Privatization of the wilds is a fruitful area for experimentation.

Third, none of this will work, nor will any private property ever be safe, if majority rule can override private rights. Eminent domain has been used to acquire land for parks and preserves, but more often the government has used it to acquire land for dams, highways, access roads, pipelines, and recreation. We ought to develop new rules for eminent domain, defining more clearly its use in the public interest, prohibiting its use for the benefit of private developers, and shifting the burden of proof to the government.

Fourth, Congress should declare a moratorium on further acquisition of land by the government. An inventory of current holdings should be undertaken with the idea of substantially reducing the public ownership of nonwild lands. From then on, whenever the government wished to acquire new tracts of land for public purposes, including wilderness protection, other land would have to be turned over to private hands.

The question of wilderness preservation is basically a part of the problem of the preservation of the private sphere in general. A free country needs a wide diffusion of private property. The government already holds too much land.[23] The politicalization of society is dangerous for everyone, and further expansion of the power of the state is surely a public bad. If a convincing case can be made for the reduction of the role of the state in wilderness preservation, then the principles learned here will have useful effects on other areas of public policy. If such a case cannot be made, then private ownership of land and resources is likely to fall under further statist control with such current proposals as national land use planning, federal

[23]This point is documented in Robert J. Smith, *Earth's Resources: Private Ownership vs. Public Waste* (Washington, D.C.: Libertarian Party, 1980), pp. 75–84. This fine, extended essay deserves wide circulation. Smith has developed a libertarian position on practically every aspect of environmental policy. His writing and conversation have strongly influenced my views.

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energy policies, and the Alaska wild lands bill. Thoreau said, "In wildness is the preservation of the world," but only if the wilderness itself is set free, and only if wilderness policy contributes to the furtherance of freedom rather than to the growth of the politicalized society.

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COMPETING FOR THE RENTAL VALUE OF FEDERAL LAND: The Assignment of Use Rights and Their Regulation

Gary D. Libecap

Growth of the governmental regulation of economic activities since the depression is normally associated with industrial production.[1] Indeed, pollution controls, work-safety requirements, and antitrust actions have recently been cited as contributing to declining productivity and sluggish business investment. Of central concern is the nature of bureaucratic decision making in the regulatory process: Bureaucrats do not bear the full costs and benefits of their actions and, therefore, can be insensitive to the negative economic effects of their actions.

The belief that government policies mainly affect manufacturing and industrial centers is mistaken, however. In the eleven western states the federal government owns or controls resources on a scale unprecedented elsewhere in the country. Fifty-three percent of the land in those states, over 400 million acres, is either owned or administered by the federal government. In Nevada, Arizona, Utah, Idaho, and Oregon, federal lands exceed 50 percent of each state's area, and in New Mexico, Wyoming, and California, they exceed 40

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The author is Associate Professor of Economics at Texas A&M University, College Station 77843.

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[1]The figures include both federal and Indian land. Department of the Interior, Bureau of Land Management (BLM), *Public Land Statistics* (Washington, D.C.: Government Printing Office, 1976).

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percent.[2] Congress delegates administration of federal land to bureaucratic agencies such as the Forest Service, the Bureau of Land Management (BLM), and the Bureau of Indian Affairs (BIA). They, in turn, assign and regulate private use of federal resources. Hence, bureaucratic decisions regarding the assignments and regulations profoundly affect investment, production, and income distribution in the western states.

The prediction can be safely made that under competitive market conditions and well-defined property rights, voluntary trading will occur, and resources such as land will be channeled to highly valued uses. The level of production and wealth increases, and the net present value of productive resources rises. These predictions cannot be made under bureaucratic conditions because bureaucracies must respond to changing political pressures. Private use permits to federal land, for instance, are likely to be short-term and unstable. Further, the regulatory role of the bureaucracy must be maintained and expanded to justify budget increases, leading to policies that generally impede market forces. Under such conditions pervasive federal ownership of land and bureaucratic control of its use result in lower levels of production and income.

Under the Taylor Grazing Act of 1934 the BLM administers 174 million acres of rangeland. Prior to 1934 vast tracts of arid land were open range, unreserved and unclaimed under the land laws. Formal application for fee title was impossible because of strict acreage limitations imposed by the Homestead Act and similar laws that restricted individual claims to 160 acres, too few for a region where 25 acres were commonly needed to support one cow or five sheep a month.[3] During the late nineteenth and early twentieth centuries, the land was used by ranchers under informal property rights arrangements.

The Taylor Grazing Act substituted formal use permits for informal arrangements. The permits were assigned and regulated under the jurisdiction of the secretary of the interior. To assist the secretary in implementing the provisions of the act, the Grazing Service was created and then later reorganized as the BLM. Grazing districts were organized as administrative units throughout the West, and 15,000 grazing permits were assigned. Since 1934 the privileges conveyed by the permits and the regulatory roles of the BLM have

[2]Grazing capacity is discussed in Department of Agriculture, *The Western Range,* Senate Document 99, 74th Cong., 2d sess., 1936, pp. 81–107.

[3]The creation of the Grazing Service is described in Gary D. Libecap, "Bureaucratic Behavior and the Assignment of Grazing Rights to Federal Lands," mimeographed (College Station: Department of Economics, Texas A&M University, 1980).

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changed substantially, increasing the authority of the BLM and reducing that of permit holders.

The BIA similarly received legislative mandate for intensive management of reservation lands in 1934. The Wheeler-Howard Act officially terminated the policy of dismantling Indian reservations and assimilating tribal members into the surrounding community. Instead it called for the maintenance of separate Indian cultures and the central management of Indian resources by the BIA and tribal councils. As with BLM lands this legislation brought formal grazing permits, replacing informal claims on most of the nineteen reservations examined for this paper.[4] Regulatory actions and the BIA experience on the Navajo reservation had an important effect on the extent and nature of bureaucratic land use controls on other reservations. Grazing permits or other limits on stocking were later established on seven reservations or parts of reservations in the Southwest: Jicarilla Apache, Mescalero Apache, Isleta Pueblo, Acoma Pueblo, Laguna Pueblo, Zia Pueblo, and Jemez Pueblo. No formal permits were assigned on the eleven remaining reservations: the Pueblo tribes of Zuni, Cochiti, Santo Domingo, San Felipe, Sandia, Santa Ana, Taos, Santa Clara, Tesuque, Nambe, and San Juan.

This paper analyzes bureaucratic land use regulations by the BLM and the BIA. Bureaucrats are viewed as acting in their self-interest along the lines developed by Niskanen and others.[5] This approach differs from the conventional analyses that view bureaucrats either as acting in the public interest or as passively responding to the industry they regulate. The analysis reveals that decisions by self-interested bureaucrats lead to inherently unstable private use rights to the range. The associated insecurity of tenure results in nonoptimal land use and lower long-term levels of production and wealth.

The Model

Both ranchers and bureaucrats seek control of federal rangeland. Ranchers holding use permits to federal land are assumed to maximize the discounted present value of the net income from productive land use subject to budget constraints and bureaucratic regulation. Regulatory policies consistent with wealth maximization for ranch-

[4]For a more detailed discussion of grazing rights on southwestern reservations, see Ronald N. Johnson and Gary D. Libecap, "Agency Costs and the Assignment of Property Rights," *Southern Economic Journal* 47 (1980): 332–47.

[5]William A. Niskanen, *Bureaucracy and Representative Government* (Chicago: Aldine-Atherton, 1971).

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ers include strict controls on access by non-permit holders, unrestricted transferal of permits, and automatic renewal and minimal regulation of land use decisions. Such conditions make grazing permits close to a private property right. They also constrain the jurisdiction of bureaucrats and their ability to justify budget increases.

For Department of the Interior officials the returns from controlling federal land equal the discounted sum of budget appropriations for regulation. Appropriations, rather than bureaucratic incomes, are important to bureaucrats because they make possible a number of utility-enhancing items: incomes, political and patronage power, and ability to enact personally desired programs. The appropriations an agency receives depend on the extent of its regulatory role, its share of federal land, and the lobbying efforts of sympathetic groups. To convince Congress of the need for larger appropriations, bureaucrats must expand the regulation of land use; doing so reduces returns to ranchers. Accordingly, the two compete for control of the range.

Major regulatory changes occur through new legislation, and minor changes occur through discretionary actions by bureaucratic managers. Niskanen, Lindsay, and others have argued that bureaucrats have considerable discretionary decision-making authority because legislation is vague and congressional monitoring is incomplete.[6] Managers have an incentive to avoid controversial actions that might bring voter pressure on Congress for a more intensive review of their discretionary authority. Since federal land is allocated through bureaucratic decisions rather than through market transactions, political power determines how far bureaucrats and ranchers can advance their relative positions through legislation.

The agency's political power depends on broad-based voter acceptance of its mission and the support of lobbying groups. Its position, however, is weakened by the presence of agencies with similar missions, competitors whose welfare is enhanced by having control of additional federal land. Those privileges, though, are costly because they reduce bureaucratic control and invite charges of favoritism and other unfavorable publicity.

The political power of ranchers is enhanced through equal representation in the Senate for sparsely populated western states. The authority of ranchers, then, depends on their influence over locally

[6]Bureaucratic models are outlined in ibid.; idem, "Bureaucrats and Politicians," *Journal of Law and Economics* 18:3 (1975): 617–43; Cotton M. Lindsay, "A Theory of Government Enterprise," *Journal of Political Economy* 84:5 (1976): 1061–77; Thomas Borcherding, ed., *Budgets and Bureaucrats: The Sources of Government Growth* (Durham, N.C.: Duke University Press, 1977).

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elected officials, which in turn is a function of their number, probability of voting, and resources available for lobbying. To achieve a united position in the western states where federal ownership of lands predominates, ranchers rely on national livestock associations, though there are costs for organizing and securing uniform positions on issues.

Because of their sharply conflicting goals, there is little ground for contracting between ranchers and agency officials. Ranchers want broad use privileges, and there are few regulations that the agency can offer as beneficial beyond mere enforcement of grazing privileges. Moreover, in most cases existing use permits are formal recognition of past, informal claims. Increased regulation thus only attenuates existing privileges. By contrast, organized competitors for land use have incentives to back the bureaucracy's efforts to constrain ranchers in exchange for new access privileges.[7].

In the competition for control of the land, bureaucratic managers and ranchers lobby to advance their positions as long as the expected gains exceed costs.[8] For given levels of political power, an equilibrium results where rental shares are stable. But political influence is unlikely to be static, and relative shifts lead to new lobbying activity.

The following predictions regarding the behavior of the BLM and the BIA are consistent with the model and are examined in the empirical analysis:

First, the desire of bureaucrats to maximize regulation while minimizing political costs implies that Indians will be given more restricted grazing privileges than non-Indians. While non-Indian ranchers using federal lands have been well-organized and influential, Indians have not.[9] They did not receive the right to vote until 1924, and the three largest tribes examined – the Navajo, the Mescalero Apache, and the Jicarilla Apache – had no permanent tribal councils until the 1930s. Hence, their political power is likely to have been weak relative to the BIA and depended more on support from sympathetic non-Indian groups.

Second, the existence of agencies competing for jurisdiction over federal land will lead to the granting of broader grazing privileges

[7]George Stigler, *The Citizen and the State* (Chicago: University of Chicago Press, 1975), outlines various components of political power.

[8]Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law and Economics* 19 (1976): 211–400, discusses the likely trade-offs made by bureaucrats in reducing political opposition.

[9]The political power of ranchers is discussed by Marion Clawson in *The Western Range Livestock Industry* (New York: McGraw-Hill, 1950), p. 13.

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to ranchers, *ceteris paribus*. Competing agencies place the control of the BLM and BIA in question, increasing the value of the ranchers' political support. This leads to assigning greater authority over land use to ranchers to obtain their endorsement in jurisdictional struggles. The past success of a bureau in securing rents from the administration of federal holdings encourages jurisdictional competition.

Third, the emergence of groups competing with ranchers for federal land will lead to greater bureaucratic regulation, *ceteris paribus*. Such groups provide an alternative constituency for the agency and lessen its dependence on the political support of ranchers. Because the new client groups do not face the political costs of attenuating the rights held by ranchers, they will push for more rapid and extensive regulation and land reallocation than the agency would.

Fourth, increased bureaucratic regulation beyond the definition and enforcement of grazing rights reduces ranch values and increases budget appropriations for the agency. Bureaucratic managers do not directly depend on returns from productive land use for income and hence are less likely than ranchers to make decisions that maximize the net value of the land. Indeed, they are more likely to enforce biological criteria, such as maximum sustained yield for forage production, in placing livestock on the range. To the extent that biological and economic stocking criteria differ, enforcing the former maximizes the regulatory role of the bureaucracy. With secure use rights, ranchers must automatically adjust stocking levels and harvest rates to meet changing market conditions if they are to maximize returns. Bureaucratic management to meet economic criteria is thus superfluous.

Grazing Rights and Bureaucratic Regulation

The Development of Bureaucratic Control

Ranchers obtained broad grazing privileges to federal land after the Taylor Grazing Act was passed in 1934. Secretary of the Interior Harold L. Ickes granted these privileges in exchange for rancher support for passage of the act. The Department of Agriculture and the Department of the Interior had competed for jurisdictional control over the remaining unappropriated federal land since 1920.[10] This competition continued after 1934 as the Forest Service continued to lobby for additional land transfers to the national forests.

[10]The growth in appropriations for the Forest Service and its impact on the Department of the Interior is analyzed in Gary D. Libecap, "Bureaucratic Opposition to the Assignment of Property Rights: Overgrazing on the Western Range," *Journal of Economic History* 41, no. 1 (March 1981), pp. 151–58.

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Under section 13 of the Taylor Grazing Act, assignment of territory to the Forest Service was allowed when it "could best be administered in connection with existing National Forest administrative units." This jurisdictional dispute strengthened the bargaining position of ranchers in securing decision-making authority over the range.

Local advisory boards of ranchers were established to outline the criteria for allocating rangeland, to get stocking levels, and to suggest other regulations. The criteria selected recognized established range use patterns. Though they did not have title, ranchers had used the land since the 1880s under informal arrangements.[11] In assigning formal grazing permits under the Taylor Grazing Act, the local advisory boards gave highest priority to those ranchers who occupied the range during the period 1929–34 and who owned land or held water rights. Second priority was given to applicants who satisfied the ownership criteria but who had not grazed their stock during the base period. Third priority went to those who had prior use but who did not own the required land or water. The procedure, then, gave preference to established ranchers with a history of range use. These ranchers were most likely to have had informal claims, since such claims were enforced by continued occupancy and use.[12] Lower priority was given to new entrants and nonlandowners whose political power was apt to have been limited.

Data concerning reaction to the assignment of grazing privileges are limited, but available evidence suggests that conflict was minor. The number of disputes processed by the Solicitor's Office grew from 6 in 1935 to 40 in 1938, while the total number of successful permittees was 15,000.[13] This indicates that formal and informal arrangements meshed without a significant redistribution of the range. Tenure under the grazing permits was secure, and the permits were generally transferable to approved purchasers.

Besides delegating authority over the assignment of permits, Secretary Ickes named Farrington Carpenter, a rancher, as head of the Grazing Division (later the BLM). No grazing fee was charged the first year, and Ickes agreed that subsequent fees would be calculated on a cost of administration basis rather than on forage value, which resulted in increased rates on Forest Service lands. When

[11] Taylor Dennen discusses informal arrangements used by ranchers to control range use in "Cattlemen's Associations and Property Rights in Land in the American West," *Explorations in Economic History* 13 (1976): 423–36.

[12] Paul Gates, *A History of Public Land Law Development* (Washington, D.C.: Public Land Law Review Commission, 1968), p. 617.

[13] Solicitor's memo to Secretary Ickes, June 17, 1938 (U.S. Archives).

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grazing fees were first levied in 1936 they were 5 cents per cow per month, while the Forest Service rates were 13 cents.[14] Ickes promised to keep administration costs low, offering in testimony before Congress to administer the lands for $150,000 in 1935 compared to the Forest Service estimate of from $1.5 to $2 million.[15]

Ranchers expanded the authority Ickes had granted them in 1934. The advisory boards, temporarily authorized to set up range administration, were made permanent by a 1939 amendment to the Taylor Grazing Act. Studies of grazing district operations in Oregon and Wyoming in the 1950s show that the boards' recommendations were almost always followed.[16] Moreover, ranchers were able to force the Department of the Interior to hire personnel sympathetic to the industry. A 1936 amendment to the Taylor Grazing Act required that all administrative officers be residents of public lands states for one year prior to their appointment. In addition the Civil Service was to give preference to "practical range experience" in filling filed positions.[17] Finally, grazing fees were kept low despite attempts by the secretary of the interior to increase them after 1941, when the jurisdictional dispute with the Department of Agriculture was settled. Grazing fees remained relatively constant in real terms through 1962, averaging 5 cents per animal per unit month from 1936 to 1962. Forest Service fees during the same period averaged 98 cents.[18]

In contrast, the BIA (then the Indian Service) dealt with a much less influential group, and the initial regulations were more severe. Moreover, no bureau competed with the BIA for jurisdiction over reservation land. The differing experiences of the BIA and BLM were probably due to differences in expected returns from the administration of federal land. The BIA had been declining through the 1920s as Indian lands were allotted to tribal members. Under the allotment policy, reservations were to be dismantled and the BIA's role terminated, a situation unlikely to have attracted the interest of other agencies. Non-Indian lands were much more promising. Since 1905 the Forest Service had shown that perma-

[14]Department of Agriculture and Department of the Interior, *Study of Fees for Grazing Livestock on Federal Land* (Washington, D.C.: Government Printing Office, 1977), pp. 2-4, 2-5.

[15]Gates, *History of Public Land Law Development*, p. 611.

[16]Wesley Calef, *Private Grazing and Public Lands* (Chicago: University of Chicago Press, 1960); Phillip O. Foss, *Politics and Grass: The Administration of Grazing on the Public Domain* (Seattle: University of Washington Press, 1960).

[17]See Libecap, "Bureaucratic Behavior," for a discussion of hiring policies.

[18]For a historical summary of fees, see Department of Agriculture and Department of the Interior, *Study of Fees*, pp. 2-13, 2-17, 2-23.

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nent bureaucratic management of land was a source of growth in budget appropriations, staffing, and individual advancement. That experience stimulated the competition between the Department of the Interior and the Department of Agriculture.

In 1934 the BIA implemented a major range management program on the Navajo reservation, involving sharp stock reductions of over 50 percent and an uncompensated, forced redistribution of sheep and land from large to small herders. In 1941 formal grazing permits were issued, continuing the cutbacks in livestock numbers. Unlike non-Indian ranchers, the Navajo were not involved in range management decisions. They resisted the BIA's efforts, and the controversy brought the BIA unfavorable publicity.[19] Moreover, the imposed stock reduction, designed to rehabilitate grass stands, brought slower results than anticipated, and regulations were continued longer than initially planned. The BIA's control of the range was challenged only after deteriorating economic conditions led Indian rights groups to pressure Congress to intervene.[20] The resulting controversy on the reservation and elsewhere threatened the BIA's appropriations and led to the firing of John Collier as its head.[21]

The model implies that under such circumstances the BIA would reduce land use regulation to quiet political criticism. The cost is a smaller role for bureaucratic managers. The prediction is supported. Since 1948 the BIA has worked with other southwestern tribes in granting formal grazing privileges, which have been assigned in areas where large herders are absent to avoid conflicts over redistribution. The BIA continues to promote equality of holdings where it assigns rights, emphasizing that equality is central to the communal tribal economy. The ownership of a few animals and the use of reservation land tie Indians to their tribes and strengthen the notion of separate cultures. This arrangement is necessary to guarantee a long-term role for the BIA. Large herders are therefore tolerated but not formally recognized by the BIA, which lacks the

[19] A more detailed discussion of the Navajo is in Gary D. Libecap and Ronald N. Johnson, "Legislating Commons: The Navajo Tribal Council and the Navajo Range," *Economic Inquiry* 18:1 (1980): 69–86.

[20] See Phelps Stokes Fund, *The Navajo Indian Problem: An Inquiry* (New York: Phelps Stokes Fund, 1939).

[21] Collier was unpopular not only for his actions on the Navajo reservation but for his controversial Indian policies in general. See Donald L. Parman, *The Navajo and the New Deal* (New Haven: Yale University Press, 1976), p. 289. For criticism of the BIA policies, see Lee Muck, "Survey of the Range Resources and Livestock Economy of the Navajo Indian Reservation," Report to the Secretary, Department of the Interior, Washington, D.C., 1948.

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political power to redistribute land. This offers an explanation for the pattern of formal rights granted by the BIA on the other eighteen reservations. Definite permits or other controls were implemented on the Jicarilla Apache, Mescalero Apache, and Isleta Pueblo. No redistribution was attempted, but large herders were generally absent, particularly on Mescalero and Isleta lands, which were leased to non-Indians until 1934. On Acoma, Laguna, Jemez, and Zia lands, the BIA has assigned permits on recently purchased lands where no large herders exist and has allowed past practices to continue on the original reservations where large herders dominated. On the remaining reservations—Cochiti, San Juan, Santo Domingo, Santa Clara, Taos, Zuni, Sandia, Santa Ana, San Felipe, Nambe, and Tesuque—land holdings are highly skewed, and the BIA has not attempted to install formal grazing permits and other range management programs.[22]

Bureaucratic Regulation of Non-Indian Rangeland since 1960

For nearly thirty years ranchers holding grazing permits to federal land had near proprietary rights. Permits were routinely renewed, grazing fees were low, and BLM regulation was minimal. Despite efforts to increase its authority, the BLM was constrained by the political power of the western range livestock industry. In the 1960s recreation and conservation groups began demanding access to federal land and restrictions on livestock use. As zealous, cohesive groups, they lobbied for voter and congressional backing. Because they weakened the political power of ranchers, conservationists supplemented the attempts of bureaucrats within the Department of the Interior to expand the BLM's role. The BLM began advertising to discredit rancher control of range policy in 1959. In that year it published controversial figures showing deterioration of public rangeland due to overgrazing.[23] Further, the BLM argued that grazing fees were low relative to those charged on Forest Service and private lands, implying that ranchers were being subsidized to overgraze. Finally, the BLM asserted that dedication of rangeland to livestock precluded other legitimate users.

Aligned with conservation groups, the Department of the Interior successfully lobbied for legislative changes that strengthened bureaucratic regulation. Major legislation included the Classification

[22]The Zuni Pueblo began implementing a permit system in 1979.

[23]Department of the Interior, *Annual Report of the Secretary of the Interior* (Washington, D.C.: Government Printing Office, 1959). The basis for those figures was not detailed. The late 1950s was a period of severe drought in the West, and that would have had an important effect on range conditions.

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and Multiple Use Act of 1964 (PL 88-607), the National Environmental Policy Act of 1969 (PL 91-190), and, most important, the Federal Land Policy and Management Act of 1976 (PL 94-579) and the Public Rangeland Improvement Act of 1978 (PL 95-514).

The Classification and Multiple Use Act called for restrictions on livestock to allow for other activities, adding that consideration be "given to the relative values of the various resources and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit of output." That mandate sharply conflicted with the Taylor Grazing Act, which was specifically designed to allocate the range for livestock use.

The Federal Land Policy and Management Act also amended the Taylor Grazing Act and for the first time formally outlined the functions of the BLM. It called for a systematic inventory of range use for potential reallocation to recreation, wildlife, and wilderness. It also called for regulation to rehabilitate the land and accomplish multiple use goals. Regulation was to center on allotment management plans drawn up for individual permit holders. Grazing fees were to be increased, the influential grazing advisory boards were made optional, and multiple use advisory boards were required. Department of the Interior officials and conservation groups strongly supported the legislation and gave testimony critical of privileges held by ranchers. Of the 335 witnesses questioned during the hearings, 215 (nearly 65 percent) represented recreation or conservation groups.[24]

The allotment management plans emphasized by the law constrain the use privileges of ranchers. They impose long-term stocking cuts of as much as 30 percent on permit holders and place restrictions on land use as pastures are withdrawn for rehabilitation. As forage growth responds, more land will be allocated to other uses under the multiple use concept.

It was predicted that since conservation groups do not face the same political costs as the BLM, they would push for more rapid and greater restrictions on ranchers. The range livestock industry has remained influential in western states and in Congress, and hence the BLM would attempt to minimize rancher opposition while expanding its range control. Those efforts, however, would strain its relationship with conservation groups.

Although the evidence is limited, it supports the hypothesis. The National Environmental Policy Act required that federal agencies

[24] U.S. Congress, *Hearings Before the Subcommittee on Public Lands on HR 5441 and HR 5622,* 95th Cong., 1st sess., 1974.

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assess the environmental impacts of their actions. In compliance the BLM prepared a single environmental impact statement (EIS) prior to the general adoption of its allotment management plans. In 1973 the Natural Resources Defense Council (NRDC) filed suit in federal court arguing that a single plan was insufficient and demanding site-specific impact statements for each area covered in the plans (*NRDC* v. *Morton*). The court concurred and ordered 212 (later reduced to 144) EISs. The order specifically required that the statements consider alernatives to livestock grazing. Further, since field hearings were required for each EIS, allotment management plans were written to provide a forum for competing claimants. The new procedure, while more satisfactory for conservationists, has resulted in costly resistance from ranchers. In court cases such as *Valdez* v. *Applegate* (U.S. District Court, New Mexico, CU-78-944C), ranchers have challenged the proposed allotment management plans.

If BLM regulations seriously attenuate the ability of ranchers to maximize returns from the range, one would predict that sales prices would fall for ranches affected by the allotment plans. To test that hypothesis, sales figures were collected for 145 ranches in New Mexico that used BLM land and that were sold from 1970 to 1978.[25] The values were converted to 1967 dollars. To adjust for land quality differences, prices were divided by the number of cattle each ranch could carry, giving price per animal unit. The average price for the nine-year period was $1,137. The price per animal unit was regressed against the percentage of total ranch acreage, which was deeded under the assumption that the greater the deeded proportion, the less vulnerable the ranch was to BLM regulations. The statistical tests reveal that price increased by $11 per animal unit for each percentage increase in the proportion of deeded land.[26] This is consistent with the notion that prospective buyers would search for ranches where property rights were secure and offer less for ranches subject to BLM regulations. Appraisal values per animal unit for grazing permits from 1965 to 1979 reveal a decline in the value of BLM permits relative to Forest Service permits and private land after 1973. Fowler and Gray, in a study of BLM grazing permit values, attribute that trend to BLM regulatory policies.[27]

[25]Ranch sales data gathered from the Federal Land Bank and Western Farm Management, Albuquerque, New Mexico.

[26]The statistical tests are described in Libecap, "Bureaucratic Behavior."

[27]John M. Fowler and James R. Gray, "Market Values of Federal Grazing Permits in

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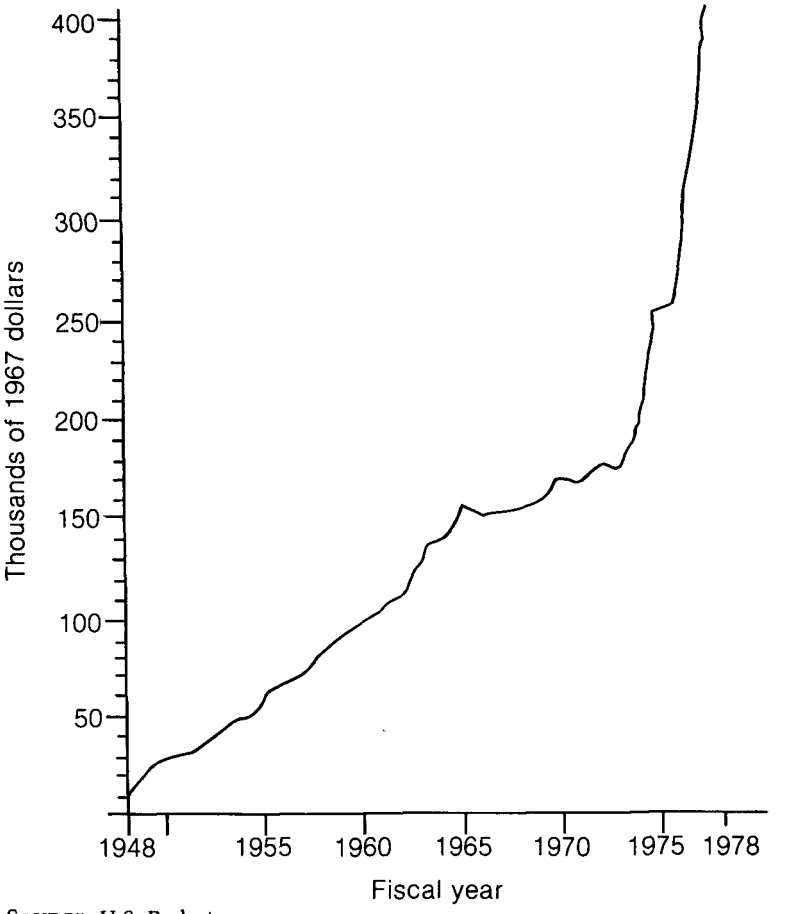
FIGURE 1
BUREAU OF LAND MANAGEMENT BUDGET



SOURCE: U.S. Budget.

While ranch values have fallen because of increased regulation, the BLM has benefited from its greater regulatory role. Figure 1 outlines total authorizations for the BLM from 1948 to 1978 in 1967 dollars. The series follows a time trend through 1972. The federal budget grew during the same period, and the BLM's share increased slowly. After 1972 the BLM budget rose sharply following legislative mandates for more control of range use. After 1972 the BLM's share of the federal budget increased significantly.

New Mexico," Report no. 2 (Cooperative Extension Service, Range Improvement Task Force, New Mexico State University, Las Cruces, March 1980).

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Conclusion

BLM and BIA behavior regarding the assignment and regulation of grazing permits on federal land is consistent with the general implications of the model. When ranchers were well-organized and when there was jurisdictional competition among federal agencies, broad grazing permits were granted. The emergence of conservation groups as claimants for non-Indian land led to more regulations. These regulations reduced returns to ranchers and made budget appropriations more available to bureaucratic managers. Political power has a crucial effect on bureaucratically assigned use rights to land. Since political power is variable, use rights and bureaucratic rules fluctuate. There will, however, always be tension between ranchers and the two agencies, and the uncertainty will shorten time horizons and reduce investment and wealth from the range resources.

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PROPORTIONALITY, JUSTICE, AND THE VALUE-ADDED TAX

Charles W. Baird

This paper has two purposes: to establish that the most frequently proposed form of value-added tax is really a proportional income tax rather than, as it is popularly seen, an inflationary, regressive sales tax; and to propose that this value-added tax be adopted as an alternative to all existing federal personal and corporate income, as well as federal employment and excise, taxes. Of course, to make such a proposal in light of the government's propensity to simply add any new tax on top of existing taxes is risky. Nevertheless, the nature of the value-added tax and the argument that it is superior to existing taxes stand apart from the danger that the government will merely add it on to present taxes. I don't believe we should refrain from identifying a superior taxing plan merely because politicians might treat it as a supplement rather than an alternative.

Proportionality and Justice

Since the time of the ancient Greek philosophers proportionality has been a generally accepted and frequently employed principle of justice. Proportionality is deeply ingrained in the Western mind as a first approximation to justice. When, for example, some authority deems it necessary for each member of a group to use less of something, the solution that seems automatically to come to mind is that each person should cut back by the same percentage.

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The author is Professor of Economics at California State University at Hayward, 94542. He wishes to thank Philip P. Storrer and Robert S. Main for helpful suggestions.

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Politicians and the press all agreed that justice during the recent California drought consisted in every household's reducing water consumption by the same percentage. The *San Francisco Chronicle*'s telephone poll indicated that such a solution was very popular with the public at large. Even the Department of Energy, an organization concerned more with coercion than justice, sells its gasoline allocation rules to the public by stressing that each oil company must cut each of its retailers back by the same percentage. Indeed, it appears that most journalists and politicians hold proportionality to be the best way of putting the principle of equal treatment before the law into effect in just about every area *except taxation.*

For a while some economists attempted to excuse the failure to employ the principle of proportionality in taxation by claiming that a progressive tax imposes on each person an "equal sacrifice." But "equal sacrifice" is not operational, because utility cannot be measured in any way that permits one person's sacrifice to be compared with another's. Moreover, the assumption of declining marginal utility of income is not sufficient to justify progressive taxation, even in principle. Even if, for every person, the marginal utility of income declined, it could well be that a *proportional* tax would result in "equal sacrifice." Declining marginal utility of income by itself merely implies that a person with higher income must be taxed by a larger *absolute* amount than a person with a lower income if both are to suffer "equal sacrifice."

In taxation, proportionality is the only known way to make the principle of equal treatment before the law operational. In the words of J. R. McCulloch in the *Edinburgh Review* in 1833, "The moment you abandon the cardinal principle of exacting from all individuals the same proportion of their income or of their property, you are at sea without a rudder or compass, and there is no amount of injustice and folly you may not commit."[1] If taxing one person's income at 50 percent and another person's income at 14 percent is considered just, why is it not just to tax the higher income at 60 percent or 70 percent? What makes one rate on the higher income fair, but not another rate? What is the operational principle? There simply is *no* operational principle. The different rates charged on different incomes are wholly arbitrary. As F. A. Hayek puts it, ". . . all arguments in support of progression can be used to support any degree of progression. . . . Unlike proportionality, progression provides no principle which tells us what the relative burden of dif-

[1] J. R. McCulloch, "On the Complaints and Proposals Regarding Taxation," *Edinburgh Review* 57 (1833): 164.

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ferent persons ought to be. It is no more than a rejection of proportionality in favor of discrimination against the wealthy without any criterion for limiting the extent of this discrimination."[2]

A proportional tax is, therefore, morally superior to a progressive tax. Of course, all taxes involve coercion, and coercion is, to most people, a bad – something they would prefer to have less of rather than more of (ignoring the costs of getting rid of it). Minimal-state libertarians, such as Mises and Hayek, argue that at least protective and judicial services are best obtained collectively through government and paid for by taxation. Coercion is a bad, but the optimal amount of coercion is not zero. Whatever the merits of the points made in the debate between the anarchists and the minarchists, taxation will be with us for a long time to come. It is useful, therefore, to seek out those forms of taxation that are morally superior to existing forms of taxation, to describe how they would work, and to advocate their adoption.

Computation of Value Added

A firm's "value added" is its gross receipts from sales minus its purchases of intermediate goods, services, and supplies from other firms and the depreciation of its plant and equipment. Figure 1 is an income statement typical of many corporate and noncorporate firms.

FIGURE 1
INCOME STATEMENT

Cost of Producing and Selling Goods and Services Sold	Sales of Goods and Services
Wages and salaries	Sales to:
Rent	Households
Interest	Other firms
*Raw materials	Governments
*Supplies	Foreigners
*Goods in process	
*Services	
Depreciation	
Net revenue	

[2]F. A. Hayek, *The Constitution of Liberty* (Chicago: University of Chicago Press, 1960), p. 313.

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The right-hand side of the statement shows the total dollar value of sales—gross receipts. The left-hand side above the dotted line shows all the dollar costs that were incurred in order to produce and sell the goods and services that the firm offers. All noncapital actual expenditures that firms make can be placed into one of the categories listed. The difference between the right-hand side and the left-hand side above the dotted line is net revenue. When net revenue is added to the left-hand side, the two sides balance.

Raw materials, supplies, goods in process (goods purchased from other firms to which something further must be done before they are ready for sale to their ultimate users), services (electricity, natural gas, janitorial services performed by others, etc.) are all purchased from other firms. Such purchases are called intermediate goods.

Durable plant and equipment (buildings, machines, typewriters, tools, etc.) are also purchased from other firms, but they are not used up in the process of production during the accounting period the income statement represents (usually a year). Durable goods that are partly used up (and in a sense become embodied in whatever finished product the firm is producing) are said to depreciate.

When Firm A subtracts its purchases of nondurable goods and services (the starred items on the left-hand side of the statement) together with depreciation from its gross receipts, the sum of money left is paid as income to households. Wages and salaries are income to households. Rents paid by Firm A directly to households owning resources, such as land and buildings, used by Firm A constitute income to such households. Similarly, interest paid by Firm A directly to households for the use of the households' financial capital (e.g., interest paid directly to households that have bought Firm A's bonds) constitutes income to such households. The net revenue of Firm A, if Firm A is not a corporation, is income to the owners of Firm A. If Firm A is a corporation, a portion of its net revenue—dividends—is direct income to its owners, and the remainder—retained earnings—is also income to its owners. Dividends retained by a corporation can be considered savings from the point of view of stockholders. The corporation saves a portion of the stockholders' income for them and reinvests it in the firm.

Value added (defined as gross receipts from all sales, including sales to government, minus purchases of intermediate goods and services *from other firms* and depreciation) exactly equals all of the incomes that *households* receive because the resources they own (e.g., labor, land, buildings, and loan funds) are used in the productive process. The value added accumulated by all of the firms in the

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private sector during a year is the same as the total amount of income originating in the private sector during that year. *A tax assessed on that value added is a tax assessed on income.* Such a tax is often called an income-based value-added tax.

To know what Firm A may deduct from its gross receipts in order to determine its value added and, therefore, its tax base, it is necessary to distinguish payments to households from payments to other firms. As I stated above, interest payments on bonds purchased by households are direct income payments to such households. These payments are exactly like wages and salaries paid to employees and are not deductible. On the other hand, interest payments made to a bank on an outstanding loan, or on bonds purchased by the bank, are payments for intermediate services from another firm and are deductible. Similarly, rents paid directly to households for the use of land and buildings the households own would not be deductible, but rents paid to business firms that own such resources would be.

The households that receive the payments that Firm A cannot deduct would not have to file any tax returns regarding those payments with the Internal Revenue Service. However, business firms that receive the payments that Firm A *does* deduct would have to file tax returns regarding such payments. The payments would constitute part of such firms' gross receipts and, therefore, would enter into those firms' calculations of their own values added.[3]

Illustrations of Incidence of the Tax

To show how the value-added tax will work, I will propose an economy with no taxes and no government expenditures and then impose a 20 percent value-added tax and an equivalent amount of government expenditure. I will assume that the government administers the tax by requiring each firm to compute its value added and then pay 20 percent of that amount directly to the Internal Revenue Ser-

[3] A self-employed person working out of his home presents a definitional problem. If Firm A hires such a person to do a marketability study on a proposed new product, are the payments to the person deductible? Payments to regular employees are not deductible; why should payments to a temporary employee be different? To deal with this problem it is necessary to have some operational definition of a firm. A self-employed lawyer, doctor, or engineer is considered a firm for tax purposes. Such a person must file federal tax Form C reporting "profit (or loss) from a business or profession." Under the proposed value-added tax substitute for the current income tax, the same implicit definition of a firm could be used. For purposes of the value-added tax, those who previously had to file Form C would be considered firms. Such self-employed individuals would have to file value-added statements and pay value-added taxes directly. Payments made to such self-employed individuals by Firm A would be deductible in the determination of Firm A's value added.

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vice. An alternative way to administer the tax—the invoice method—will be discussed in a later section.

If firms must compute their value added and pay 20 percent of that amount directly to the IRS, they could do one of two things in order to maintain their pre-tax revenue. They could reduce their nominal payments to suppliers of factors by the amount of the taxes, or they could attempt to recoup the taxes through raising prices. Let's consider these alternatives in that order.

Suppose that without any tax of any kind and no government expenditures, the net revenue of Firm A is $500, calculated in the following way:

Gross Receipts	$4,500
Less intermediate goods and depreciation	−1,500
Less factor payments to nonowners (wages and salaries, rent, interest)	−2,500
Net Revenue	$ 500

Firm A's value added would be $3,000—its net revenue plus its factor payments to nonowners. Since net revenue is directly or indirectly income to owners, value added is simply the sum of the incomes generated by this firm.

The $1,500 in intermediate products purchased by Firm A is the sum of the value added by the various other firms involved in the production of those intermediate products. (For example, if Firm A is a refiner and its intermediate product purchases are crude oil, the amount it pays for the crude oil is the sum of the value added by the firms that owned the well and the value added by the firms that transported the crude oil to the refinery.)

Suppose that a 20 percent value-added tax is imposed on all firms at all stages of production and that the government spends the proceeds of the tax purchasing goods and services from private firms. Firm A's tax liability would be $600 (20 percent of $3,000). The tax liability of other firms emerging out of transactions with Firm A would be $300 (20 percent of $1,500). When the government spends the $900 in taxes received from Firm A and its suppliers of intermediate goods by purchasing government goods from other private firms, some resources will be redirected toward the production of government goods and away from the production of private goods. For example, suppose the $900 was spent purchasing government goods from Firm B. Firm B's net revenue could be calculated as

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follows (in each case using 20 percent of the corresponding original figures for Firm A):

Gross Receipts	$900
Less intermediate goods	−300
Less factor payments to nonowners	−500
Net Revenue	$100

Since $900 was taken away from production and sales of $4,500 worth of private goods produced by Firm A, Firm A's net revenue could be calculated as follows (using 80 percent of the corresponding original figures in each case):

Gross Receipts	$3,600
Less intermediate goods	−1,200
Less factor payments to nonowners	−2,000
Net Revenue	$ 400

The tax liabilities of the firms involved in the depicted expenditures would then be as follows:

Firm A	$480 (20% of $2,400)
Firm A's suppliers of intermediate goods	$240 (20% of $1,200)
Firm B	$120 (20% of $600)
Firm B's suppliers of intermediate goods	$60 (20% of $300)

The total tax collected would be $900, and the indicated flow of expenditures and receipts could be maintained indefinitely.

Before the tax was imposed, total factor payments arising out of transactions with Firm A were $4,500: Direct factor payments to nonowners by Firm A were $2,500, factor payments made by firms involved in the provision of intermediate products to Firm A were $1,500, and factor payments to owners of Firm A were $500. After the tax is imposed, the government expenditures made, and the redirection of resources completed, total after-tax factor payments come to $3,600. The components of total after-tax income are:

Source	Gross Income	Tax	After-Tax Income
Direct income paid by Firm A to nonowners	$2,000	$400	$1,600
Income of Firm A's owners	400	80	320

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Source	Gross Income	Tax	After-Tax Income
Firm A's suppliers of intermediate goods	1,200	240	960
Direct income paid by Firm B to nonowners	500	100	400
Income of Firm B's owners	100	20	80
Firm B's suppliers of intermediate goods	300	60	240
	Total after-tax income		$3,600

The numbers above illustrate only one possible outcome of the imposition of the tax and government expenditures. In the example firms responded to the imposition of the tax by cutting all factor payments – direct and indirect – to owners as well as to nonowners. The tax is unambiguously a proportional tax on incomes earned. All factors that used to work are still working. The only difference is that after the tax and expenditures some resources are employed producing government goods rather than private goods. Total expenditures haven't changed, and the average money price level hasn't changed. All factors together have lower real incomes – $3,600 instead of $4,500. (The consumption of the $900 of government goods is not counted as income.)

It is frequently asserted that the imposition of a value-added tax would result in firms attempting to recoup the tax by raising prices. Firms would not reduce nominal factor payments, it is alleged; they would pass the tax on to buyers. For that reason a value-added tax must be regarded to be a sales tax, and it is inflationary to boot.

But even if the value-added tax were a form of sales tax, which it isn't, it couldn't be inflationary. In the absence of ratifying increases of the money stock, any exogenous increase in the average money price must result in decreased real expenditures. Decreased real expenditures would cause production cutbacks and layoffs until the average money price returned to its original level. The sum of the new base price and the tax add-on would, on average, have to equal the price that existed before the imposition of the tax. Since it is the base price that is actually available to sellers for use, nominal factor payments would have to be lowered, and the end result would be as it is in the example above.

Suppose, however, that ratifying increases of the money stock did occur. In the face of a 20 percent tax, prices would have to be increased by 25 percent in order that the after-tax factor payments could be unchanged. That is, if the tax is to be recouped through

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raising prices, and since the tax would be based on the new prices charged, total dollar expenditures would have to amount to $5,625 (125 percent of the original $4,500). The tax yield on $5,625 would be $1,125, so the composition of spending would be $1,125 on government goods (produced, as before, by Firm B) and $4,500 on private goods (produced, as before, by Firm A). The net revenue calculations for the two firms would be:

	Firm A	Firm B
Gross receipts	$ 4,500	$ 1,125
Less intermediate goods	−1,500	−375
Less nonowner factor payments	−2,500	−625
Net revenue	$ 500	$ 125

The tax liabilities of firms A and B would be:

Firm A	$600 (20% of $3,000)
Firm A's suppliers of intermediate goods	$300 (20% of $1,500)
Firm B	$150 (20% of $ 750)
Firm B's suppliers of intermediate goods	$ 75 (20% of $ 375)

The total tax collected would be $1,125, and, again, the indicated flow of expenditures and receipts could be maintained indefinitely.

Just as before, the tax is collected by assessing each firm on the basis of its value added, and the firms pay the tax out of funds that in the absence of the tax, but at the now higher prices, would have been used to make factor payments. The distribution of the tax burden is:

	Gross Income	Tax	After-Tax Income
Direct income paid by Firm A to nonowners	$2,500	$500	$2,000
Income of Firm A's owners	500	100	400
Firm A's suppliers of intermediate goods	1,500	300	1,200
Direct income paid by Firm B to nonowners	625	125	500
Income of Firm B's owners	125	25	100

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	Gross Income	Tax	After-Tax Income
Firm B's suppliers of intermediate goods	375	75	300
Total after-tax income			$4,500

The price index relative to the previous example is 1.25. Real after-tax income paid to factors, therefore, equals $4,500/1.25, or $3,600—exactly what it was in the first example. Even though sellers recouped the tax through higher prices, the actual burden of the tax shows up as decreased real income. Again, *the value-added tax is a proportional income tax.*

The Invoice Method

The main reason why most people fail to recognize that the value-added tax is a proportional income tax is the way it is administered in many European countries. In the examples given here, the tax was collected by direct assessment on all private firms. Each firm, it was assumed, calculated its value added by subtracting its purchases of intermediate goods and depreciation from its gross receipts, reported the result to the tax collector, and was assessed 20 percent of the result in taxes. The firm paid the tax out of funds that otherwise would have been factor payments—both direct and indirect, and to owners and nonowners.

In many European countries the so-called invoice method is used to collect the tax. The invoice method works in the following way. Consider three firms in a given chain of production. Without taxes, Firm I produces an intermediate product that is sold to Firm II for $500. Firm II further processes the intermediate product and sells the resulting product to Firm III for $1,100. Firm III then finishes the product into its final form and sells it to a final customer—one who does not further change the nature of the product but uses it as a consumption item or a tool. The final user of the product pays Firm III, we will assume, $1,500. Each of the three firms, we will suppose, has $25 of depreciation. The value added by each firm, and thus the total income payments generated by each firm, together with tax liability (assuming a 20 percent tax rate) is as follows:

	Firm I	Firm II	Firm III
(A) Gross receipts (without tax)	$500	$1,100	$1,500
(B) Depreciation	25	25	25

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	Firm I	Firm II	Firm III
(C) Purchase of intermediate products	0	500	1,100
Value added (A – B – C)	475	575	375
Tax liability (20% of value added or incomes generated)	95	115	75

The actual collection of the tax is based on invoices received and issued by the firms. Each firm is assessed 20 percent of its gross receipts as a value-added tax, but it is given a tax credit for value-added taxes paid to other firms and for 20 percent of depreciation. In our example, assuming that the firms attempt to recoup the tax by raising prices and that sufficient new money to allow the resulting increased dollar expenditures is created, it works out as follows: Firm I gives Firm II an invoice that shows that the base price of the product sold was $500 and that 20 percent of that base price was added on for the value-added tax. Firm II, in other words, actually pays $600 to Firm I. Firm II gives an invoice to Firm III showing the base price of the product sold to Firm III was $1,100 and that $220 was added on (20 percent of $1,100) for the value-added tax. Firm III therefore pays $1,320 to Firm II. Firm III gives an invoice to the final user of the finished product showing that the base price charged was $1,500 but that $300 (20 percent of $1,500) was added on for the value-added tax. The final consumer pays $1,800.

When the time comes to pay the taxes to the government, the following calculations and payments are made by each firm:

	Firm I	Firm II	Firm III
Gross tax (20% of gross receipts from base prices)	$100	$220	$300
Credit for VAT paid on invoices	0	100	220
Credit for 20% of depreciation	5	5	5
Net tax liability	95	115	75

Note that the tax actually paid to the government by each firm exactly equals 20 percent of its value added, which is exactly the same as 20 percent of the incomes generated by the productive activity of each firm. The factor payments generated are the same in nominal terms as they were before; but with the higher prices, real after-tax incomes are lower by the amount of the tax. This is the same situation as that depicted in the second illustration in the

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previous section, except that nominal prices (base prices plus the tax) are 20 percent, rather than 25 percent, higher than without the tax because with the invoice method the tax is assessed on base-price revenues rather than gross receipts from base prices plus the tax. Real after-tax factor payments are the same in both cases.

The tax falls on people in their roles as suppliers of factors of production; but when firms attempt to recoup the taxes through higher prices (assuming the necessary additional money is created), nominal factor payments are what they were before the tax. The lower real income shows up as higher money prices, and thus people come to think of the tax as a sales tax. When the invoice method is used to collect the tax, the sales tax illusion is reinforced because final buyers receive invoices with the tax explicitly added on to the base prices. They are really paying an income tax without having to file any forms, but it looks like a sales tax.

The main advantage of the invoice method over the direct assessment method accrues to the tax collector: The invoice method makes tax evasion difficult. To evade the tax, the recipient of an invoice would want it to say that he paid more tax to the issuer of the invoice than he actually paid. On the other hand, if the issuer of the invoice is to be able to evade taxes the invoice must understate his gross receipts and, therefore, the amount of the tax collected from the recipient of the invoice. These two conflicting desires effectively deter evasion.

Saving and the Value-Added Tax

It is frequently asserted that savers can avoid the value-added tax, but since the tax is really a tax on income it should be obvious that such an assertion is incorrect. Especially when firms respond to the tax by cutting nominal factor payments rather than by raising prices, it is clear that savers and consumers alike have less real income because of the tax. When firms respond to the tax by raising prices, the fact that savers do not avoid the tax is more difficult to see. After all, in this case the lower real incomes show up through higher prices rather than lower nominal incomes. If some of the unchanged income is saved rather than spent on consumption goods, doesn't it escape taxation?

Final products are not only consumption goods; they are also investment goods (plant, equipment, machines, tools). If people use less of their incomes purchasing consumption goods – in other words, if people increase the amount of saving they do – that saving will be channeled into investment goods. Savers supply loanable funds to borrowers. When investment goods are purchased, the

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value-added tax will be paid. Thus the borrowers will have to reduce the rates of return they offer to the savers. The savers do not avoid the tax.

Consider a person who earns $100,000 in income and spends only $40,000 on consumption goods, saving the other $60,000. A person saves by purchasing stocks, bonds, mortgages, and savings institution passbook credits. The saved money goes to people who spend it on housing, plant and equipment, and other investment goods. The sellers of those investment goods will charge those buyers the value-added tax on the purchases. The $60,000 does not escape taxation. The tax is paid out of the $60,000 when the investment goods are purchased. Nor does the saver himself escape the tax. The interest return he earns will be lower than it would be if there were no tax at all. The present value of the lost interest returns equals the value-added tax on the $60,000. In other words, the market value of the claim to that interest return will be reduced by the amount of the value-added tax on the $60,000. Suppose that in the absence of any tax the actual rate of return earned on investments was 10 percent. The saver would receive $6,000 per year interest income. When a 20 percent value added tax is imposed, only $48,000 of real investment goods could be purchased. If the real rate of return is still 10 percent, his interest income would be $4,800 per year. That $4,800 interest income represents an 8 percent rate of return on the $60,000 saving.

The Relative Price of Saving

All income taxes, including the income-based value-added tax, that do not exempt either interest on savings or income that is saved increase the price of saving relative to the price of consumption and so hamper saving and capital accumulation. To see this, imagine a taxless economy that generates a 10 percent rate of return on investment. One would have to earn $1.00 to purchase a $1.00 consumption good, and one would also have to earn $1.00 to purchase an annuity of 10 cents. The price of consumption relative to the price of a 10 percent annuity would be one-for-one. Now suppose that a 20 percent income tax is imposed. One would have to earn $1.25 to purchase a $1.00 consumption good. How much would one have to earn to purchase an after-tax annuity of 10 cents? The before-tax annuity would have to be 12.5 cents. The price of an asset that generated that annuity would be $1.25 (the rate of return on investments is still 10 percent), but in order to have $1.25 left over from earnings, one would have to earn $1.56. The price of a dollar's worth of consumption relative to the price of a 10 cent an-

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nuity is no longer one-for-one. The price of the 10 cent annuity is 1.245 (1.56/1.25) times the price of a dollar's worth of consumption. The income tax has raised the relative price of saving and is thus biased against saving.

One way to remove the bias with an ordinary income tax is explicitly to exempt income that is saved. If that were done in the above example, the before-tax annuity that would have to be obtained in order to get an after-tax annuity of 10 cents would still be 12.5 cents (interest income is still taxed), but the amount that would have to be saved in order to buy an asset that would pay a 12.5 cent annuity would be only $1.25. Thus the price of a net 10 cent annuity would be 1.25/1.25 times the price of a dollar's worth of consumption. The exchange rate would be one-for-one, just as it was without the tax.

The corresponding way to remove the bias with an income-based value-added tax would be to exempt investment goods. If that were done, the purchase prices of the investment goods would not be raised to recoup the tax, so the amount of saving that must be done to purchase the assets would not be increased; but interest payments, along with other factor payments, would be reduced in real terms.

When investment goods are exempted from the value-added tax, the result is sometimes called the consumption-based value-added tax, but this is really a misnomer because the tax still falls on individuals in the form of lower real after-tax factor payments (income). When investment goods are not exempted, they are really taxed twice – directly when purchased and again when the interest returns they generate (part of factor payments) are taxed.[4]

To illustrate: When all goods are subject to the tax, and when the tax has been recouped through higher prices, what was a $1.00 consumption good before the tax will, after the tax, be a $1.25 consumption good. Similarly, what was a $1.00 investment good yielding an annuity of 10 cents will, after the tax, be a $1.25 investment good still yielding an annuity of 10 cents. However, the real value of the 10 cent annuity is 8 cents (10 cents/1.25). To get an annuity with a real value of 10 cents, the nominal annuity must be 12.5 cents. If, after the tax, a $1.25 asset yields a 10 cent annuity, it takes a $1.56 asset to yield a 12.5 cent annuity. Thus the price of a real 10 cent annuity is $1.56, while the price of a real $1.00 consumption good is only $1.25. If investment goods were exempt

[4]Norman B. Ture, "Economics of the Value Added Tax," in *Value Added Tax: Two Views* (Washington, D.C.: American Enterprise Institute, 1973), pp. 81–86.

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from the tax, it would take only $1.25 to purchase an asset that would yield a real annuity of 10 cents, so the imposition of the tax would not affect the relative price of saving.

Conclusion

That a proportional income tax is more just and efficient than a progressive income tax is well known. There seems to be little justice, to use an example from *The Constitution of Liberty*, when two lawyers performing exactly the same service (as indicated by the payments their clients are willing to make for the service) at the same time end up with different net payments merely because they have made different amounts of income elsewhere during the same accounting period. That is certainly not equal pay for equal work.[5] Moreover, progressive income taxation decreases the willingness of resource owners to supply their services, makes worse the distortion of the relative price of saving, and so reduces real economic growth. It seems that the substitution of the value-added tax for all other federal taxes, or even for just the existing federal personal income tax, is a policy proposal that all supporters of growth in the private sector relative to the government sector would support.

Perhaps Murray N. Rothbard would not support the proposal. In the second edition of *For a New Liberty* Rothbard warns libertarians against "right-wing opportunism":

> The major problem with the opportunists is that by confining themselves strictly to gradual and 'practical' programs, programs that stand a good chance of immediate adoption, they are in grave danger of completely losing sight of the ultimate objective, the libertarian goal. He who confines himself to calling for a two percent reduction in taxes helps to bury the ultimate goal of abolition of taxation altogether. . . .
>
> [T]he libertarian must never support any new tax or tax increase. For example, he must not, while advocating a large cut in income taxes, also call for its replacement by a sales or other form of tax. The reduction or, better, the abolition of a tax is always a noncontradictory reduction of State power and a significant step toward liberty; but its replacement by a new or increased tax elsewhere does just the opposite, for it signifies a new and additional imposition of the State on some other front. The imposition of a new or higher tax flatly contradicts and undercuts the libertarian goal itself.[6]

[5] F. A. Hayek, *Constitution of Liberty*, p. 317.

[6] Murray N. Rothbard, *For a New Liberty*, rev. ed. (New York: Collier Books, 1978), pp. 299–300, 306.

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In my view, however, the advocacy of the substitution of the value-added tax for all other federal taxes, or even for the existing federal personal income tax alone, is not an example of "right-wing opportunism." The value-added tax is *not* a new or an additional tax. It is merely an income tax. My proposal, in either form, is at least a call for a *reduction of income taxes*. If, in addition to a reduction of the federal personal income tax, some other taxes, such as employment taxes and excise taxes, are abolished, then so much the better. The libertarian goal would not thereby be obscured.

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RESPONSIBLE INDIVIDUALS AND THE NATION'S ENERGY FUTURE

Richard Stroup and *John Baden*

Since October of 1973 many Americans of various political persuasions have called for a clear and coherent energy policy. Those on the left tend to believe that Americans, lacking the foresight or self-discipline required to make appropriate adjustments to energy shortages, must have their use of energy controlled. Mileage standards for automobiles, the fifty-five miles-per-hour speed limit, thermostat control in buildings, and other limitations on individual freedom have been legislated because of this belief. Those on the political right tend to be less enthusiastic about controls of this kind, yet even some of them have called for certain kinds of governmental control for reasons of national security. Apparently they believe that since individuals in their market decisions will place too little weight on national security matters as such, energy supplies and energy capacity reserves may become too small. The necessity of military and economic preparedness in the face of external political and military threats thus provides their excuse for governmental interference.

We will show that the concerns of both the right and the left are based on faulty assumptions about market outcomes. We will demonstrate that a nation of free individuals, held responsible for their decisions by the market mechanism, is much more likely to be prepared for the future than is a nation of precisely the same individuals, with the same perceptions and expectations, whose energy decisions are made instead in a collective, even perfectly democratic, fashion. It is a sad commentary on the state of economics and

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Richard Stroup is Professor of Economics and Co-Director of the Center for Political Economy and Natural Resources at Montana State University, Bozeman 59715. John Baden is the center's Director.

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economic education that most people, including a large number of economists, will find several parts of our analysis to be novel and counterintuitive.

Our reasoning is based on three basic points. The first, drawn from Austrian economics, is that the expectations on which all decisions concerning the future are based are subjective. These expectations will differ, often dramatically, from person to person. Points two and three are emphasized in the legal and economic literature of property rights. Point two is that in a market it is the high bidder (not the person with the median opinion) who controls. The third point is that because information and educated hunches about the future are costly (and they always are), decision makers will allocate their time and effort according to where they think the greatest returns to them lie.

In the pages that follow we will show that *(a)* preparedness, in terms of stored energy, facilities to supply fuels in times of reduced supply or increased demand, and available energy raw materials, is enhanced by secure and transferable private property rights; *(b)* promising innovations are more likely to be funded when both the supply of funds and the demand for output are decided in the free market; *(c)* expectations about the future will be better informed when bid and asked prices in open markets gather and reflect what sellers and buyers want rather than when democratic votes perform that function; *(d)* we can expect less waste as well as more innovation when decisions on innovation are made privately rather than democratically; and *(e)* we can expect that the central government will be systematically unable to attract and hold good forecasters. After discussing each of these points in turn, we will return to our basic theme: A strong and effective concern for the future is much more likely in a marketplace with free and responsible individuals than in even a perfect democracy.

Energy Preparedness in a Market Setting

Consider a tanker filled with diesel fuel recently produced at a refinery. Should the fuel be put into storage for future contingencies or should it instead be put on the market immediately? To help answer that question, as well as to aid in the discussion to follow, we will introduce a simple model enabling us to compare a perfectly democratic setting with a free market in the same society with exactly the same people holding the same expectations.

To decide whether the fuel should be sold now, the decision maker compares its current value with what he anticipates will be its highest-valued future use (net of storage costs and discounted to

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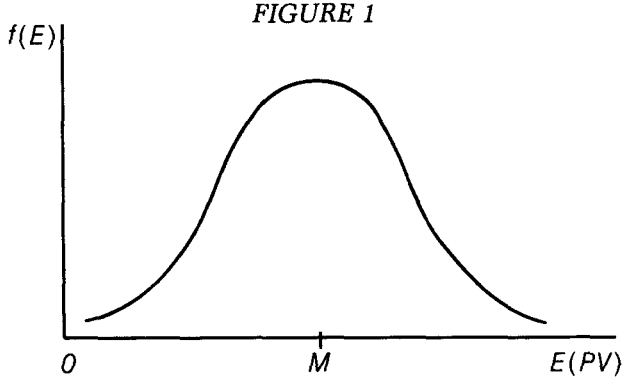
FIGURE 1



the present). If current sale yields more net benefits than any expected future sale, then the decision maker will choose to sell rather than keep the fuel.[1] A major difficulty is how to estimate the future value of the fuel, which depends on several conditions, all subject to change. For example, how much fuel will be available in the future? How much future demand will there be for diesel fuel? What substitutes will be available? Each person is likely to have different answers to these questions, as well as a different discount rate.

The views of the populace on the present discounted value of future use can be depicted in a diagram (see figure 1). The abscissa (or horizontal axis) indicates an individual's *estimated present value E (PV)* of storing the fuel, which is a single value in dollar terms, expressing the sum of all the conditions listed above. The ordinate (or vertical axis) indicates the frequency with which each estimate is held. The curve is low on the left, indicating that few people expect that the fuel will have a low value. Similarly, the curve is low at the right, indicating that few people place a very high expected value on conserving the fuel. If we locate on the abscissa a value of *M* equal to the market value of the fuel if sold now, all *E (PV)* greater than that value indicates that preservation is more highly valued. Similarly, all those whose *E (PV)* falls short of *M* (the current development value) presumably must conclude that current use of the fuel is the better choice.

Consider now the most straightforward kind of democratic political decision-making regarding the fuel. Each voter expresses

[1] A similar analysis in a different setting was presented by Richard Stroup in "Property Rights and the Rate of Resource Exploitation," given at the 1976 meetings of the Public Choice Society, New Orleans, La., March 1976, and in Richard Stroup and John Baden, "Property Rights and Natural Resource Management," *Literature of Liberty* 2, no. 4 (October-December 1979): 5-40.

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his opinion of whether the fuel should or should not be sold currently, and the majority rules. (We assume that each individual is not simply self-interested but votes for what he believes will benefit society most.) To predict the outcome of such a vote, we simply ask whether the majority of the preservation value estimates fall to the right or to the left of *M*, the current market value of the fuel. If the majority is to the left, current sale will be mandated; if to the right, conservation is supported. Put another way, if the median voter has *E (PV)* greater than *M*, storage of the fuel will result, while current development wins if his *E (PV)* is less than *M*. In a very real sense, the median judgment prevails.

By contrast, consider a simple market situation—involving the same people with the same tastes, expectations, and discount rates—where the fuel is simply controlled by the highest bidder. One type of bid is *M*, for current sale, made by sellers to current diesel fuel users. The highest such bid represents the fuel's worth in current use. The other type of bid is from those who want to store the fuel for future use. We can assume either altruistic or totally selfish motives for these bidders. In either case, each bid reflects the bidder's belief as to the fuel's future value. Obviously, if anyone with sufficient funds or credit or the ability to convince fellow risk-takers believes that the fuel will be sufficiently more valuable in the future than now, the fuel will be preserved. If the believer *cannot* convince even a small percentage of the people, his vote would surely be cast on the losing side. The median opinion does not control decisions in the market. The tendency instead is for control to go to those with the strongest bias to conserve the fuel. Such a conserver is one who believes that the value of the resource will rise rapidly; he is usually called a speculator.[2]

Speculator is widely used as a derisive term, and we have long been puzzled about the general condemnation of speculators. Apart from the monopoly case, such criticism seems to be at variance with the announced preferences of those who would look to the future. Saving for the future is, after all, exactly the function of a speculator. Only by paying a higher price than those who prefer to consume now can he conserve the fuel for his profit and for the future. While *current* consumers have good reason to object to speculators for driving up prices and hence reducing current consumption, those in the future should shower speculators with

[2]This "ready reserve" of fuel is handy for emergencies, during which its readiness makes it extremely valuable. Energy is most cheaply stored by leaving the crude oil in the ground and thereby avoiding the carrying costs of early refining and aboveground storage.

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praise and rewards—if the speculator has guessed correctly. Indeed, we have argued that such speculation might logically be subsidized.[3] The central point, of course, is that successful speculators benefit the community in the future at the expense of resource consumption in the community now. Their actions in markets over time are analogous to those of distributors of goods over space. The distributor of oranges buys in Florida on behalf of New Yorkers. Orange prices would be lower for Florida consumers if interstate trade were forbidden; but this prohibition would not benefit New Yorkers who desire Florida oranges.

Those who speculate may have a long view, encompassing a future when the resource will be developed. Even if they have a short view, however, they can sell the property rights to the fuel, consuming the benefits of their speculation long before society reaps the benefits of the resource reallocation. So long as they can transfer the property rights they hold, the fuel remains a salable asset and a good investment. As time passes and the higher-valued time of use approaches, the present discounted value rises. Note that in the market setting, unlike the democratic setting, we have not assumed that speculators care at all about the future users. Although simple self-interest (even greed) is sufficient to motivate the speculator, the market forces him to act *as if* he cared. It is difficult to imagine a mechanism other than market speculation that could be devised to give current voters an incentive to consider the wants of future citizens. When rights are democratically controlled, future voters must depend on the generosity of present voters to sacrifice current consumption of governmentally controlled fuel.

It should be clear that one who is truly interested in seeing more fuel saved for future use would want to be sure that the fuel is privately rather than democratically controlled. Control by the private sector systematically increases the likelihood that the fuel will be preserved by ensuring that if even a few citizens really believe that a stockpile of fuel is worth storing, they will find it in their interest to see that it is in fact saved. They need not convince half the population that their view is correct. In addition, they have a strong incentive to act on their beliefs. In the process of doing good for the community, they can do quite well for themselves.

It is important to note that our current policy of increasing governmental control, especially in times of emergency or fuel shortage, works strongly against the private alternative. We would

[3]Our tongue-in-cheek suggestion was offered in "Trial Balloon," *Taxing and Spending* 3, no. 3 (Summer 1980): 67.

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surely see more fuel storage in the private sector if it were not for price controls and the fear of price controls in the future. The owner of fuel or oil in storage bears all the costs of forgoing consumption, yet runs the risk that when the value of the commodity rises sharply in the future, price controls or outright confiscation of his property will transfer the benefits away from him. Saving for one's own future benefit is one thing; bearing the cost of that saving while others may get the benefits in the future is another.

In short, with enforceable and transferable private rights to fuel, we would expect more fuel storage than the median voter would prefer. Yet if private rights are attenuated by the threat of fuel confiscation or price controls, this privately financed resource is lost.

Energy Supply Facilities

Will private investors be willing to build the sort of excess capacity that would help ensure against future reductions in external fuel supply or dramatic increases in demand? The answer to this question is closely analogous to our foregoing analysis: If the market is allowed to work and if even a few investors believe that the current cost of excess capacity is justified by great returns in the future, reflecting relative scarcity of capacity at that time, then there is again an incentive to speculate and to divert investment resources away from other promising projects into building some excess capacity in fuel production facilities. Once again, those who hold such a belief need not convince 51 percent of their fellow citizens of its correctness. And once again, the incentive to do well for oneself buttresses the opportunity to do good for society.

Energy, Raw Materials, and the Market

Is the world running out of oil? Will "quick-buck" oil corporations develop our limited supplies of crude oil too rapidly? Our model applies once more. A speculator who saves an oil well from early exploitation, when the price is lower than the discounted present value of future exploitation, will tend to be a successful (and rich) speculator. Whether he is lucky, a good predictor, or simply listens to those who are good predictors, the result is the same. If a contemporary energy speculator could predict our energy future as accurately as Joseph of Egypt predicted famine in biblical times, the true believers would become wealthy indeed.

Innovation and the Market

A crucial part of our energy future will be determined by the success of innovation in energy development, but uncertainties abound. Will potential innovators be allowed to experiment? Will

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markets be available for energy innovations? Will innovators be able to obtain funding for their ventures? In answering these questions it is once more productive to consider the model above. If energy innovations are handled privately rather than democratically, the innovator need only round up the funds rather than convince 51 percent of the electorate that his "wild idea" is indeed worth pursuing. A smoothly functioning democracy is much more likely to discourage innovative activity than is a market, where all sorts of harebrained schemes can be (and are) financed.

A particular innovative venture might be financed by a J. P. Morgan–like financier, by a partnership, by an ordinary corporation, or by a speculative corporation selling penny stocks. The point is that any potential innovation that cannot attract the necessary funding from *any* source would also obviously have a great deal of trouble in a perfectly democratic setting, where approval from the majority is required.

The demand for innovations can be just as easily suppressed by governmental (democratic) activity as can the supply. Many alternative energy sources currently touted by the "soft path" advocates were once in great demand in the United States. These include wind, hydroelectric power, and fuel alcohol. In a market as large as the United States, much diversity is to be expected. Almost any good or service produced in the world will be demanded somewhere in this huge market area. Scattered rural farms, for example, were a large market for wind-powered electric generators. Diversity provides a buffer to the economy. If a Middle East crisis makes oil scarce, it is useful to have a variety of well-developed alternative technologies on hand. Is collective action required to support diverse energy alternatives? Not if markets for the alternatives have existed for years in various parts of the nation.

Table 1 indicates the time path of interest in three alternative energy sources. After the turn of the century there was a growing interest in windmills, small-scale hydroelectric power, and fuel alcohol. The declining interest in fuel alcohol following the mid-1930s can probably be explained by the declining price to consumers of gasoline. A similar fate apparently overtook wind power and hydroelectric power generation, but with an important difference from society's point of view. The major market for small-scale hydroelectric generation and wind power had always been the remote rural areas of the country. Far from the cheap power of central generating stations, these markets supported a very large windmill industry in the United States up to and including the early 1930s. Central station electric power became cheaper because of the de-

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TABLE 1

NUMBER OF ARTICLES CONCERNING SOLAR ENERGY FORMS IN *THE INDUSTRIAL ARTS INDEX* 1913–1940

	Solar (cookers, power, heaters, electricity)	Wind (power, windmills)	Hydroelectric Power	Alcohol as Fuel
1913	3	1	1	3
1914	10	0	4	1
1915	7	2	18	3
1916	3	1	20	6
1917	0	1	23	5
1918–19	0	6	39	11
1920–21	4	14	33	16
1922–23	6	8	17	19
1924–25	1	17	19	8
1926–27	2	6	12	9
1928–29	0	11	22	9
1930–31	5	11	15	7
1932	9	2	10	6
1933	11	1	7	63
1934	8	6	15	12
1935	13	3	10	7
1936	23	4	6	19
1937	4	4	4	6
1938	7	3	4	9
1939	8	1	3	2
1940	19	0	5	4

velopment of larger-scale, more efficient plants; in addition, however, political pressures on the federal government caused the introduction of important federal subsidies to rural power customers.

In order to make power available at an artificially low price to rural residents, the Rural Electrification Administration (REA) arranged guaranteed low-interest loans, subsidized expertise, and exemption from income taxes to rural power cooperatives. Rural customers, some of whom would have been customers for alternative sources of power, were thus subsidized in their use of central station electricity. Additional subsidies to all electrical utility customers were (and are) in the form of rate regulation. Electricity is available to rural residents at the same rate that it is available to residents of more densely populated areas, although the latter are much cheaper to serve. One result of the governmental interven-

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tion was to hasten the demise of some markets for alternative energy producers.

To the extent that decision making in a democratic setting leads directly toward a standardization of services available to all citizens, or indirectly toward standardization via egalitarian measures, an important form of national resiliency is lost. Just as a biological "monoculture" is much less likely to withstand environmental shocks than a biologically diverse community, so too is a "monotechnological" society more prone to serious and perhaps mortal danger from external shocks. Like biotic diversity, economic diversity is a healthy state of affairs. Unless and until we are prepared to control our external environment as carefully as a farmer controls the external inputs to his wheat field, we are likely to be much better off preserving the economic diversity fostered by free markets than to indulge in the uniformity fostered by collective, democratic decision-making.

Informed Expectations: The Role of the Market

Our energy future poses a number of tough questions. Which energy paths show the most promise? Which capital investments make sense now? Will coal gasification pay? Which parts of the Overthrust Belt in the northern Rockies should be investigated first? In judging which institutional environment is best suited for the development of successful energy strategies, we must pay close attention to the ways in which alternative institutional environments foster the best answers to these and other questions regarding a highly uncertain future. In a collective, democratic setting, answers to these important questions are selected ultimately by the voter. By contrast, in a market the answers are chosen first by investors and then ratified or rejected by consumers. In comparing these two settings, then, the important question becomes, who will be better prepared to choose, the voter or the same person choosing among various markets in which to invest and spend his own money?

Rational Ignorance and the Voter

When information is as costly as it is regarding future states of the world, decisions must be based on limited information. Individuals allocate the time and efforts needed to make decisions, as they allocate all scarce resources, toward those uses that yield greater personal benefits.[4] The search for an analysis of informa-

[4]This section condenses some of the material found in chapters 4 and 32 of James

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tion on alternatives will be undertaken on those matters that are both important to the concerned individuals *and* significantly influenced by them. The average citizen will fail to study national energy policy options, even though they are extremely important, because he will have essentially no *personal* impact on energy policy. Consider an analogous situation: the farmer and next season's weather. Although the weather is probably the most important factor in the determination of a farmer's success, a rational farmer does not study meteorology because he knows quite well that no matter how much he learns he will be unable to control the weather. He may make some attempt to *anticipate* the weather, but he will seldom study intensely something over which he has no control. In a similar fashion, the average citizen has precious little knowledge about the many alternatives that would be relevant to the national energy policy. Indeed, the average citizen is rationally ignorant about most political matters. The fact of the matter is that the average American of voting age cannot even name his congressman, much less make a sound judgment on a national energy policy. Table 2 makes this point while simultaneously showing that throwing a matter into the political arena is scarcely the way to "even the odds" between classes of voters: white and nonwhite, rich and poor, or rural and urban. Returning briefly to our farming analogy, if our farmer raises dairy cows the one political matter that he probably does study is the issue of dairy price supports. Politicians such as John Connally are justly famous (infamous?) for recognizing this fact and giving (selling?) to such farmers the policy they want at the expense of the general public. Our point here is that only on issues in which the person has a special interest is rational ignorance likely to be overcome. As we shift our gaze to the private sector, we note that in the market each individual's input regarding a particular enterprise is likely to be precisely in proportion to that individual's interest as a consumer or investor in that enterprise.

Information in a Free Market

Decision makers in the private sector also must act on imperfect information. The crucial difference is that each decision is made with the decision maker in full control of the particular situation. When a person decides what heating is best for his home, for example, or how much fuel efficiency he will choose in an automobile, he gets what he chooses. He also lives with any mistake he makes.

Gwartney and Richard Stroup, *Economics: Private and Public Choice* (New York: Academic Press, 1980).

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TABLE 2

POLITICAL KNOWLEDGE AND ITS DISTRIBUTION

		Location		Race		Income	
	Total Population (%)	City (%)	Rural (%)	White (%)	Black (%)	Under $5,000	Over $15,000
Correctly identified their congressman	46	37	55	50	17	38	50
Did not know or failed to identify their congressman correctly	54	63	45	50	83	62	50

SOURCE: Louis Harris Poll, conducted for the U.S. Senate, Committee on Governmental Operations. Published as *Confidence and Concern: Citizens View American Government (Part 2)* (Washington, D.C.: Government Printing Office, December 1973), pp. 215–516.

Unlike his choice at the voting booth, the costs and benefits of market choices are borne by the very person doing the choosing.

Every investor, even one choosing to buy penny stocks in a mining company, has an incentive to investigate and to choose the right industry, and the right firm within that industry, in which to invest. A person interested in a particular form of solar conversion should have special knowledge about that particular option. However, that person's enthusiasm will probably be tempered in an investment decision by whatever realism and self-interest he can muster. He may wish to put unlimited amounts of *other* people's money into an energy pipe dream, but his own resources are likely to be too dear if such a venture does not appear promising.

The Power of Investors

Investors are powerful people in a market system. In effect they set the agenda from which all of us may choose. Note, however, that investors who provide attractive choices tend to prosper, while those who provide unattractive choices tend to lose personal wealth and with it control over future investments. An enterprise that fails to deliver will fail to prosper, and a thoroughgoing failure usually means bankruptcy. In this way the resources of society are redirected along avenues judged by investors to be promising. Of course, in a collective setting we may choose not to allow individuals who have made poor choices to bear the negative results

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of their choices. We may choose to tax the successful and transfer the proceeds to those who made bad choices. The Lockheed and Chrysler bailouts are fine examples of such a choice. In a truly free market, however, the careful choices of consumers and investors are honored.

Subsidies to hold resources in inefficient uses are not the only way in which political decision-makers override the good sense of private decision-makers. Whole new industrial developments, barren of innovation and other saving features, can also be sponsored by subsidies and price distortions. All that is required is an organized lobbying effort on behalf of resource owners favored by the new program. The farm lobby, for example, has been able to channel huge numbers of tax dollars into their program to use grain in the production of ethanol. Gasohol, a mixture of 90 percent gasoline and 10 percent ethanol, can be used to stretch our gasoline supplies. However, it is so expensive that some agricultural economists have compared that process to stretching our supplies of hamburger by adding a few extra pounds of tenderloin steak. The value of the resources necessary to produce the gasohol is simply a great deal more than the value of the resources (even at high crude oil prices) necessary to produce straight gasoline. The politically powerful farmers have been able to get both gasoline tax exemptions at the state and federal level and an implicit subsidy from the entitlement program. These forms of subsidy add up to more, per gallon of ethanol, than the total cost per gallon of manufacturing gasoline from expensive OPEC crude oil. In addition, the farmers have arranged for a further 10 percent investment tax credit on top of the normal tax credit for facilities producing ethanol from grain. And in addition to this tax credit, at this writing more than $100 million is available from the federal government in the form of grants, loans, and loan guarantees for alcohol production facilities, and more billions are proposed. When energy decisions are made collectively, we must expect that political power, not economic (or other social) efficiency, or even commonly held notions of equity, will rule.

Expectations and Energy Choices

It is not difficult to see why we believe that energy choices for the future will be based on sounder expectations and better logic if left to the private sector. Rational ignorance is far less a problem in the private sector. Both the incentive to gather more information regarding important choices and the "reality checks" on decisions once they are made are much stronger there.

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Innovation and Waste

Innovators have more freedom to act in the private setting than in the democratic one. To obtain resources for their activities, they need to convince only a small fraction of all potential investors, rather than 51 percent of all voters. Innovators and their backers are also held responsible for their actions. Incorrect choices and inefficient management reduce the wealth of those who make such bad decisions. It is difficult to admit that one has been wrong and painful to abort the efforts based on mistaken decisions, but in a market there is a clear signal (losses) and a strong incentive to move on. There is every reason to allow sunk costs to sink.

Those directly involved in an enterprise (private or public) nearly always have the best information, if not the soundest judgment, regarding that enterprise. In a market setting, the enterprise is watched carefully by the few people with a direct profit or loss interest in that enterprise. The story is quite different for a public enterprise or one financed by government money. Seldom does anyone outside the enterprise have a large stake in the enterprise's success or failure. Such operations are typically nonprofit, so that there is no clear signal of success or failure. Indeed, success within a bureaucracy is generally associated with the growth of that bureaucracy rather than with reduced cost or greater production as such. As Paul Craig Roberts has pointed out in the *Wall Street Journal*, Department of Energy officials would be out of a job if somehow they saw to it that the energy crisis evaporated tomorrow. As Niskanen, Tullock, Buchanan, and other public-choice economists have indicated, social efficiency is hardly a goal for the rational decision-maker in a bureaucracy. The pain involved in a shrinking bureaucracy is intense; the rewards to those who make it shrink are not, however great the social benefit might be. Public decisions really are public goods, just as would be the elimination of smog in Los Angeles.

Energy and the Residual Claimant

Decisions about the allocation of energy are made differently in the private sector than they are in a democratic setting. Most of the differences come down to how tightly each system links responsibility with authority. In other words, the institutional systems differ substantially in the degree to which they hold decision makers accountable for their actions. In a market situation with private property rights, the transferability of those rights holds the individual decision-maker responsible for his actions. Suppose that

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we have a free market in gasoline and that an individual buys 100 gallons. He might use it for a family vacation or to move his cows to a new pasture. In either case, he is fully accountable for the cost of the gasoline he uses. He has paid at least as much for that gasoline as was offered by those who wish to store it for the future, burn it in an outboard, or use it in any other conceivable fashion. Did the user "waste" the gasoline? It is extremely difficult for anyone else to know in detail about the user's business or pleasure. More importantly, no one need care because, by using the 100 gallons of gasoline, the decision maker forgoes the opportunity to purchase that amount (in value terms) of any other resources in the world. The decision maker has paid the cost and will receive the benefits. He is thus held fully accountable for the fact that the world has 100 gallons less gasoline.

There is simply no comparable mechanism in the public sector by which this degree of accountability is possible. "Accountability" in the public sector has always been and always will be an elusive goal, sought after primarily by more detailed planning statements or applications in advance of actions and more detailed record keeping as actions occur—i.e., "red tape." Given the subjectivity of costs and benefits, as well as our inability to make interpersonal utility comparisons, the concept of a "social optimum" is hollow, devoid of any real meaning. There is simply no way that we can hold decision makers responsible for the accomplishment of what we cannot, even in theory, establish as the socially appropriate goal. Since socially preferable outcomes cannot be defined or measured, special interests can be expected to dominate public decisions.

In the private sector, the owner of a resource becomes the *residual* claimant on the value produced by that resource. If any way can be found to increase the value produced by the use of that resource, its owner will be able to capture that value—provided, of course, that title to the resource is established and transferable. For example, the owner of an oil well wants to be sure that nothing diminishes the value of his assets. Even if he personally never uses the oil, or even lives to see it pumped out, anything that increases the cost of extracting it or decreases its value after extraction will instantly decrease his wealth by decreasing the value of the asset for which he has title. Similarly, if he can seek out someone who can find a better use for the oil than any existing bidder, then he can instantly increase the value of his assets and his wealth.

The cost of not having the residual claimant making decisions on a valuable resource can be seen currently in the case of the Bon-

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neville Power Administration (BPA), a federal agency in charge of selling federally owned hydroelectric power in the Pacific Northwest. Because the dams producing the power were built at the best river sites in the Pacific Northwest, their electricity production has a very low cost. At the same time, it has a very high value. Alternative means of producing the same electricity are far more expensive and are being undertaken today. Yet the BPA power is sold at cost, largely to huge aluminum plants established many years ago to take advantage of the cheap power. Other users of electricity in the region would pay very high prices to obtain that electricity, but the rights are not transferable, and there is no residual claimant owning that electricity. Thus we have the spectacle of the BPA delivering electricity to the aluminum plants at about one-tenth of the cost at which utilities must pay to generate power at the many coal-fired power plants springing up all over the region.

Could the BPA power be conserved by the aluminum industry and some of the power be sold to other customers? Physically, a good deal of conservation could be achieved. At a cost, aluminum plants could be modified to use new processes that consume at least a third less electricity per ingot of aluminum than is now being used. Less aluminum could be used in automobiles or in other products that use aluminum. Since electricity is steadily growing more expensive, items that use aluminum should logically also become more expensive and carefully economized on. But since neither BPA nor their aluminum customers own the electricity in such a way that they can benefit from conserving electricity at a cost, and selling that electricity to the users now busily constructing new coal-fired power plants, the conservation and the socially efficient transfers never take place. Those with the authority to make the desirable changes are not fully responsible for the effects of their decisions, and the more comfortable thing for them to do is to delay the painful transition – or more accurately, to force others to make even more costly adjustments instead. Those who control the electricity are not residual claimants.

Energy Controlled by Residual Claimants

One of the most chaotic, independent, seemingly uncoordinated, and generally "messy" industries in the United States is agriculture. America has approximately two million commercial farms and ranches, the overwhelming majority of which are family operations. (In reality the fabled "corporate farm" is almost always a family corporation.) The managers of the farms are noted for their distrust of formal programs and social planning. Although they

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tend to favor subsidies to agriculture, these are the only coercive programs they are likely to support. Such individuals are unlikely to be influenced by "moral-equivalent-of-war" appeals to make sacrifices or similar efforts to generate social concern as a mask for the primary causes of the energy problem.

Aside from some range sheep and cattle operations, American agriculture has become highly energy intensive, which is what we would expect because nearly all current operations were developed on seventeen cents a gallon diesel fuel while labor has been relatively expensive since at least 1950. The farmer knows that he must pay people their opportunity cost of employment. In contrast to muscle power from labor, the marginal cost of using hydraulic cylinders is usually very low indeed. While people in New York and California are discussing the virtues of going back to the land, farmers are calmly equating at the margin, computerizing their decision-making processes, and removing themselves from direct contact with the land. Agriculture and agriculturists are fundamentally dependent on inanimate energy. Further, they are not especially sensitive to moralizing pronouncements about the "need" to conserve.

These facts may seem to paint a dismal picture at best for conservation, but fortunately farmers and ranchers are, like others, predominantly self-interested. In addition, the farmer normally operates as a residual claimant. While farmers and ranchers tend to be wealthy (in terms of assets), they also tend to be "cash poor." They are usually rich only when they sell out, and thus they tend to be highly sensitive to expenses, particularly when fuel bills are often due ten days from delivery.

If one considers energy conservation and innovation from the perspective of those more concerned with behavior than with moral motivations for behavior, farmers and ranchers may be considered ideal citizens. Because they consume substantial amounts of energy, it pays them to be sensitive to conservation. An increase in the relative price of fuel thus creates a powerful incentive for entrepreneurs to develop energy-saving tools and techniques.

Large farm tractors consume more than ten gallons per hour of tillage work. When fuel was seventeen cents a gallon, the expense was small, if not trivial; at one dollar per gallon it is trivial no longer. Popular farm magazines such as *Farm Journal* and *Successful Farming* regularly feature articles on no-till and minimal-till farming, with tables and charts demonstrating variations in yield under alternative methods. Obviously, the firms that manufacture farm machinery are eager to exploit the energy-saving advantages that

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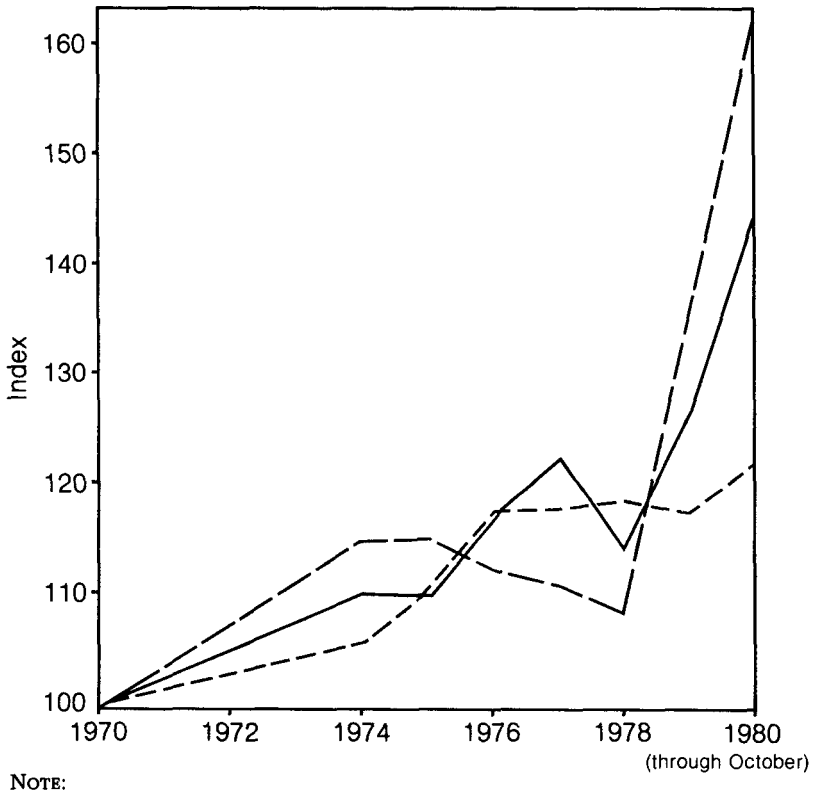
FIGURE 2
FARMERS AND ENERGY



NOTE:

Number of pages devoted to energy conservation and on-farm energy generation in *Successful Farming* and *Farm Journal*.

Index of gasoline prices.

Index of electricity prices.

they are increasingly designing into their equipment.

The content of the popular farm magazines clearly evidences a high degree of concern with energy conservation and, to a lesser degree, with energy production from crop residue and other unusual sources. In recent years every issue of the magazines we surveyed featured numerous articles dealing with topics such as solar grain-drying, farrowing houses and building orientation, low-energy irrigation systems, energy supplies from crop and animal residue, insulation, engine-tuning and maintenance for fuel savings, engine conversions for fuel economy, single-trip planting, cogeneration, and energy-saving or -producing innovations by single individuals in remote locations (see figure 2).

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In American agriculture's response to the real cost of energy, we find harmonious and spontaneous adjustment to changing circumstances. In the absence of coercion, national plans, or anything other than responses to market signals, individuals conserve, innovate, and act in a socially responsible fashion when driven by self-interest. Rewards are individual and direct. Reward or punishment is evidenced at the bottom line. It is difficult to imagine a more successful method of coping with increasing scarcity than leaving it to a residual claimant such as a farmer.

Government and the Successful Forecaster

A final point to make, and a simple one at that, is nevertheless crucial. To the extent that energy policy alternatives are considered and evaluated by professionals and experts within the government, reliable forecasting is essential. Even a proper presentation of reasonable policy alternatives that the people (or their elected representatives) may vote on requires predictions of future supply and demand conditions. Yet it is likely that a governmental unit will be systematically unable to attract a successful forecaster in any arena so important as the energy market. The services of anyone who can forecast energy demands or supplies better than the market in general will be worth hundreds of millions, if not billions, of dollars in the private sector. No matter what personal, professional, or charitable goals a forecaster might have, more help toward reaching those goals is likely to be forthcoming if his work is done in the private sector. To use Donald Gordon's example, not since Joseph of Egypt has a government forecaster compiled a truly enviable record regarding truly important forecasts.[5]

[5]See Donald F. Gordon, "Comments on 'Conservation of Resources and the Price System,'" in *Economics of Resources*, ed. Robert Leiter and Stanley Friedlander (New York: Cyrco Press, 1976), pp. 36–42.

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RESOLVING THE TRAGEDY OF THE COMMONS BY CREATING PRIVATE PROPERTY RIGHTS IN WILDLIFE

Robert J. Smith

During man's relatively brief existence on this planet, he has relied on the bounty of its flora and fauna for his existence. He has harvested wildlife for food, clothing, shelter, medicines, beasts of burden, pets, and companionship. Over most of this period, this harvesting and exploitation had little impact on those resources. Human population was very low, and most animal and plant populations were relatively large. Animal and plant communities, populations, and species that became extinct did so from other than human causes. Only in recent centuries has man's exploitation of wildlife begun to have a deleterious effect. This was the result of rapid population growth, more efficient means of capture and kill, and expansion into new continents, especially islands and tropical areas where many species of wildlife had evolved with small, localized populations and without contact with man or his camp followers, such as dogs, cats, and rats. Western exploration and colonization quickly created serious problems of overharvesting and overexploitation of wildlife and led to a slow development of human-caused extinctions.

However, there is increasing evidence that primitive man also had a profound impact on many species. Humans did not live in the idyllic harmony with nature that has been so rapturously portrayed by the more romantic environmentalists who question the direction of modern life and call for a new environmental ethic. At least

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The author is an economic consultant in Washington, D.C.

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some of the large mammals, such as mammoths and mastodons, that roamed the earth during the Pleistocene Epoch and immediately thereafter and whose disappearance has been attributed to natural causes, were forced into extinction by primitive men with primitive tools. They drove herds over cliffs, into swamps, or into box canyons, often setting massive grassland fires to assist in the drive.

It would appear that precivilized, or at least preindustrial, man exploited wildlife just as carelessly and as effectively as does modern man. The mythologized American Indians also used wasteful and ecologically unsound methods of hunting and killing. Regarding the Plains Indians' exploitation of the buffalo, Baden, Stroup, and Thurman point out that

> it is generally held that these highly diverse groups shared a common reverence for the land and the interdependencies of nature that provided man his niche.... The actual behavior attributed to these cultures reads like an admonition from Francis of Assisi, the patron saint of the ecology movement.
>
> Prior to the introduction of the horse, the hunting of bison was uncertain, and relatively unproductive. In the pre-horse period the capture of a buffalo was comparatively rare. Its biomass was highly valued and hence fully utilized.
>
> In effect, the introduction of the horse, steel tools and later firearms lowered the "price" of the animal. As the price fell due to technological adaptation, patterns of utilization changed dramatically. During this period many buffalo were killed by Indians merely for the tongue and the two strips of back strap. By 1840 the Indian had driven the buffalo from portions of its original habitat.[1]

It is not true, however, that the Indians' "wasteful" use of wildlife occurred after the introduction of white man's tools. There is abundant evidence that the Indians engaged in wasteful harvesting methods whenever the opportunity arose. Long before they had horses and rifles, the Plains tribes regularly set vast prairie fires in the late summer and fall in order to stampede buffalo herds over cliffs or bluffs. "A successful drive produced a large number of carcasses, often more than could be used before the meat spoiled.... At a large kill much of the meat spoiled before it could be processed."[2] Fires were so commonly used that millions of acres were blackened each year. The Washo tribe of the Great Basin lived in an extremely hostile environment, barely eking out a precarious ex-

[1]John Baden, Richard L. Stroup, and Walter Thurman, "Good Intentions and Self-Interest: Lessons from the American Indian," in *Earth Day Reconsidered,* ed. John Baden (Washington, D.C.: The Heritage Foundation, 1980), pp. 7-9.

[2]Francis Haines, *The Buffalo* (New York: Thomas Y. Crowell, 1970), p. 20.

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istence, yet, during the fall they would drive such enormous numbers of jackrabbits into their nets that after the skins were taken, the meat was left to rot.[3]

Overexploitation of wildlife is not a peculiar characteristic of Western man, nor is it a consequence of some form of the modern economic system or the much maligned "commerce" so frequently condemned by environmentalists. Whenever and wherever there have been incentives to overharvest or deplete wildlife it has taken place, whether by primitive or modern man.

While the environmental movement comprises a diverse amalgamation of different groups, with concerns ranging from visual "pollution" such as clear-cuts, to chemical- and smoke-induced damage to human health, the glue that binds the groups is wildlife conservation and preservation. Even here there is a wide and growing chasm among organizations. The more "conservative" groups are interested in wildlife management, such as increasing the numbers of commonly hunted species of fish and game. The "middle-of-the-roaders" are interested in developing sustained-yield management programs for species where it is clear that wise management and international cooperation can achieve better results than ending all harvesting. The "liberals" push for an end to the exploitation of most species and a complete ban on all trade in most threatened wildlife. Finally, there are the animal rights groups, the "radicals," who value the rights of animals to life and liberty at least as highly as human rights.

The growth, influence, and public support of these organizations has increased rapidly over the past two decades. Since 1970, conservationists have painted a dismal picture of an increasing struggle for survival of wildlife, with one species after another being pushed to the brink of extinction. There is no doubt that human-caused extinctions are occurring at an increasing rate and generating momentum for the environmental movement.

Norman Myers treats the problem of disappearing species in considerable detail and emphasizes the accelerated rate of extinction:

> At least 90% of all species that have existed have disappeared. But almost all of them have gone under by virtue of natural processes. Only in the recent past, perhaps from around 50,000 years ago, has man exerted much influence. As a primitive hunter, man probably proved himself capable of eliminating species, albeit as a relatively rare occurrence. From the year A.D. 1600, however, he became able, through advancing technology, to overhunt animals

[3]James F. Downs, *The Two Worlds of the Washo: An Indian Tribe of California and Nevada* (New York: Holt, Rinehart and Winston, 1966).

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> to extinction in just a few years, and to disrupt extensive environments just as rapidly. Between the years 1600 and 1900, man eliminated around seventy-five known species. . . . Since 1900 man has eliminated around another seventy-five known species. . . . The rate from the year 1600 to 1900, roughly one species every 4 years, and the rate during most of the present century, about one species per year, are to be compared with a rate of possibly one per 1000 years during the "great dying" of the dinosaurs.[4]

Since 1960, human population growth and worldwide development have greatly accelerated the extinction rate, which may have reached 1,000 species per year by 1975. Myers projects that by the late 1980s it may reach one species per hour.[5] This is, indeed, a dismal picture, and it is important to recognize that it is not merely small and local populations of wildlife that have suffered. Many animal species that have disappeared or have been drastically reduced were at one time found in truly enormous numbers.

The passenger pigeon, which was native to North America, was once probably the most numerous species of bird on earth. At its peak, its population may have numbered around 3 billion. Its migrating flocks darkened the skies over towns and cities and sounded like an approaching tornado, yet they were extinct by 1914, mainly because of massive market-hunting. A similar fate befell the great auk, a large, flightless seabird that nested in vast numbers on islands in the North Atlantic. It was exterminated by whalers and fishermen who slaughtered it for food, eggs, feathers, and oil.

Many other species that survived overexploitation, although often only barely so, were slaughtered in equally staggering numbers. The Spanish explorers described the buffalo herds as a limitless "brown sea." At one time, 75 million roamed the western plains, but by 1895 there were little more than 800 left, most in captivity or on private ranches. Vast flocks of ducks, geese, prairie chickens, and shorebirds were decimated by market hunters to provide relatively inexpensive meat for the large cities. Naturalist Frank Graham, Jr., points out:

> In 1873 Chicago markets bought 600,000 prairie chickens at $3.25 a dozen. Frank M. Chapman, the ornithologist, recalled as a boy in

[4]Norman Myers, *The Sinking Ark* (Oxford: Pergamon Press, 1979), p. 4.

The distinction between natural and human-caused extinction seems to be a philosophically loaded one. Once we make human beings some special type of causative agent apart from the rest of nature, it is very easy to begin to single out specific groups of humans as "good" or "bad," e.g., conservation organizations are good and multinational timber companies are bad. What does it matter to the species whether its extinction results from natural or human causes? – it is just as dead.

[5]Ibid., pp. 4–5.

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> the 1870s the glut of prairie chickens in the butcher shops.... By the end of the century he had to travel to the sand hills of Nebraska to find them in any numbers.[6]

It is obvious, however, that not all natural resources or wildlife have disappeared or even been seriously depleted. Environmentalists, journalists, and writers draw our attention to the most shocking cases. But there are many species that are more common today than they were at any previous time. Many plant and animal species exist in large numbers today that were not present in North America before the arrival of the white man. Furthermore, certain animals and plants are thriving under some specific ownership and management conditions but vanishing under other conditions. It is extremely important to examine these cases in order to understand why overexploitation of some resources and wildlife takes place and why other living or renewable resources are managed on a self-sustaining basis.

Why are some species disappearing and others thriving? First, we can examine what is disappearing and what is not. Apparently, few environmentalists have taken the time to do this in their haste to catalog extinct and vanishing species. It is true that the prairie chicken nearly vanished—the heath hen is extinct, the Atwater's greater prairie chicken has been reduced to endangered species status, and the rest are uncommon, localized, and greatly reduced in numbers—but what about other chickens? Why is the Atwater's greater prairie chicken on the endangered species list but not the Rhode Island Red, the Leghorn, or the Barred Rock? These chickens are not even native American birds. They came to this continent with the first European settlers, and the small flocks at the settlement in Jamestown, Virginia, in 1607 became the basis for a broiler industry that produces 3 billion birds a year.[7]

Similar questions can be asked: Why was the American buffalo nearly exterminated but not the Hereford, the Angus, or the Jersey cow? Why are salmon and trout habitually overfished in the nation's lakes, rivers, and streams, often to the point of endangering the species, while the same species thrive in fish farms and privately owned lakes and ponds? Why do cattle and sheep ranchers overgraze the public lands but maintain lush pastures on their own property? Why are rare birds and mammals taken from the wild in

[6]Frank Graham, Jr., *Man's Dominion: The Story of Conservation in America* (New York: M. Evans and Co., 1971), pp. 23-24.

[7]Robert E. Cook, Harvey L. Bumgardner, and William E. Shaklee, "How Chicken on Sunday Became an Anyday Treat," in *The 1975 Yearbook of Agriculture: That We May Eat* (Washington, D.C.: Government Printing Office, 1975), p. 125.

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a manner that often harms them and depletes the population, but carefully raised and nurtured in aviaries, game ranches, and hunting preserves? Which would be picked at the optimum ripeness, blackberries along a roadside or blackberries in a farmer's garden?

In all of these cases, it is clear that the problem of overexploitation or overharvesting is a result of the resource's being under public rather than private ownership. The difference in their management is a direct result of two totally different forms of property rights and ownership: public, communal, or common property vs. private property. Wherever we have public ownership we find overuse, waste, and extinction; but private ownership results in sustained-yield use and preservation. Although it may be philosophically or emotionally pleasing to environmentalists to persist in maintaining that wildlife, the oceans, and natural resources belong to mankind, the inevitable result of such thinking is the opposite of what they desire.

Harold Demsetz defines communal ownership as

> a right which can be exercised by all members of the community. . . . The community denies . . . to individual citizens the right to interfere with any person's exercise of communally-owned rights. Private ownership implies that the community recognizes the right of the owner to exclude others from exercising the owner's private rights. . . .
>
> Suppose that land is communally owned. . . . If a person seeks to maximize the value of his communal rights, he will tend to overhunt and overwork the land because some of the costs of his doing so are borne by others. The stock of game and the richness of the soil will be diminished too quickly. . . .
>
> If a single person owns the land, he will attempt to maximize its present value by taking into account alternative future time streams of benefits and costs and selecting that one which he believes will maximize the present value of his privately-owned land rights. . . . It is very difficult to see how the existing communal owners can reach an agreement that takes account of these costs.[8]

It is important to recognize that this distinction between the destructive overuse of common property resources and careful sustained-yield use of private property resources does not merely apply to a comparison of wild with domesticated populations of plants and animals.

Common property problems involving wildlife have been especially prevalent in America, and they continue to be extremely vex-

[8]Harold Demsetz, "Toward a Theory of Property Rights," *American Economic Review* 57 (May 1967): 354–56.

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ing precisely because of American wildlife law. The President's Council on Environmental Quality has stressed that "under U.S. law, native wildlife belongs to the people; it is not private property, even on private land."[9] Victor B. Scheffer points out that

> wildlife in the United States is the property of the people.... No animal may be reduced to private ownership except by permission of the state. Wild animals do not belong to the owner of the land upon which the animals live, though the owner can post his land against entry and thus restrain the public from using its property.[10]

In Europe, native wildlife often belongs to private landowners or is managed under a combination of private and public property. Some European countries have fewer problems of overexploitation of wildlife, regardless of population pressures and economic and political systems. In other words, we find precisely what economic analysis has predicted about the treatment of common property and private property wildlife resources.

The salmon fishery provides a nearly perfect example of the differences between private and common property management. Salmon are anadromous fish. They hatch in the clear, shallow waters of the upper reaches of rivers, go downstream to the sea where they grow to maturity, and then return upstream to spawn another generation in the same rivers where they were hatched. Management of a fishery should be a relatively low-cost operation because the only requirements are to maintain a high-quality spawning environment and to prevent overfishing. The fish don't need to be fed because they grow to maturity in the sea and return as a highly valuable source of protein.

Yet most of the salmon in the United States have either disappeared from their ancestral rivers or are being rapidly depleted precisely as a result of their being treated as part of the common heritage. As a common property resource, they belong to everyone, can be caught by everyone, and essentially belong to no one. They run a gantlet of competing users at every stage of their migration. They are sought at sea by commercial fishing boats, off the river mouths by sports fishermen, in the rivers by netting operations, and upstream by rod fishermen and Indians, all of whom are interested in taking all the salmon they can before others do. In addition, foreign fishing fleets take all the salmon they can beyond the

[9]Council on Environmental Quality, *The Sixth Annual Report of the Council on Environmental Quality* (Washington, D.C.: Government Printing Office, 1975), p. 257.
[10]Victor B. Scheffer, *A Voice for Wildlife: A Call for a New Ethic in Conservation* (New York: Charles Scribner's Sons, 1974), p. 138.

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200-mile limit. Furthermore, the rivers are also common property; dams and logging operations often make them impassable, and pollution makes them uninhabitable.

Because no one owns the salmon, each user is pitted against all other users, and the result has been a rapid depletion of the stock. As each group catches fewer fish, they turn to the government for special legislation that will limit, control, and regulate the catch and the fishing techniques used by their competitors. As a result, fishing techniques have become increasingly inefficient and costly. But this still does not prevent overfishing.

Douglass C. North and Roger LeRoy Miller have commented on the alarming decline of the Bristol Bay salmon fishery in Alaska.

> In an attempt to reverse the trend, regulations over the season, fishing hours, boats, and gear increased in complexity. . . .
>
> Naturally, the results in real life are more like a nightmare than a fairy tale. Fishermen are poor because they are forced to use inefficient equipment and to fish only a small fraction of the time, and of course there are far too many of them. The consumer pays a much higher price for red salmon than would be necessary if efficient methods were used. Despite the ever-growing intertwining bonds of regulations, the preservation of the salmon run is still not assured.
>
> The root of the problem lies in the current non-ownership arrangement. It is not in the interests of any individual fisherman to concern himself with perpetuation of the salmon run. Quite the contrary: It is rather in his interests to catch as many fish as he can during any one season.[11]

The consequence of treating the salmon as common property has been to destroy the salmon resource and to waste economic resources through regulations. John Baden describes the results:

> The regulations are such that it is increasingly more difficult and more expensive to obtain salmon. . . . The state and federal regulations are now such that salmon . . . have a negative social value, if one includes the cost of government management of the industry. Given current institutions, society would be better off if the salmon disappeared; it costs society more to get a salmon than it is worth for food.[12]

The environmental literature has reported at length on the sad plight of the salmon fisheries; but many authors appear either to be

[11] Douglass C. North and Roger LeRoy Miller, *The Economics of Public Issues,* 2d ed. (New York: Harper & Row, 1973), pp. 109–11.

[12] John Baden, "Persona Grata: An Interview with John Baden," *World Research Ink* (November–December 1979), p. 22.

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unaware of common property theory or, worse, to ignore it because it clashes with their philosophical view that wildlife should belong to everyone. So we continue to read their attacks on profit-seekers, free enterprise, big business, and a consumptionist lifestyle. And we continue to watch the salmon disappear.

Fortunately, salmon are a highly desirable fish, and American entrepreneurs are attempting to remove them from the common property trap, even though they generally run afoul of our wildlife laws, which act to prevent private property solutions. Obviously, under a common property system, there is no incentive for any user to restock the fishery by creating a private hatchery because everyone else would merely receive a cost-free benefit from his investment. But attempts at salmon mariculture or farming are being made where private owners can avoid the problem of having their fish migrate along common property rivers.

One such effort is being made by Bay Center Mariculture Company in Washington State. Until recently, raising salmon in ponds in order to market them for profit was not permitted in Washington, although taxpayer-supported state fish hatcheries were used to help alleviate overexploitation. Bay Center reports:

> It has been discovered in recent years that salmon go through their early development and growth much faster in brackish water than in the fresh water we are accustomed to expect them in during their early life.... We take advantage of this by both sea-farming salmon and raising them to market size in controlled ponds. Because of the specificity of salmon to return to the spot of their birth, it is possible to release them at an early age and allow them to mature in the sea and return to the hatchery site a year earlier than they would if raised in nature in freshwater streams. The expected return is a very small percentage, but still very profitable.[13]

In 1977 Weyerhauser initiated a similar system in southern Oregon, where the young salmon will be raised in ponds at the head of a bay and then released into the bay, whence they will go out to sea. They will not be able to prevent fishermen from catching the returning salmon at the mouth of the bay, but Weyerhauser expects to make a profit if one percent of the adult salmon return to the company's fish ladders. In the wild, approximately 2 to 5 percent of the salmon survive to return to their spawning grounds.

Such programs not only solve wildlife conservation problems at private rather than at taxpayer expense, but they reduce the take

[13]Bay Center Mariculture Company brochure, Bay City (Willapa Bay), Wash., n.d.

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on the wild common property populations and, as a positive externality, provide food for the wild food chain.[14]

Outside the United States we find a strikingly different situation. In Iceland and in some northern European countries, the salmon fishery is in much healthier shape because the rights to the salmon or the salmon rivers are privately owned. Some of the finest stretches of rivers are owned or leased by individuals, groups of fishermen, or fishing lodges, and the salmon are not overfished. It is in the economic self-interest of the resource owners to conserve the salmon. Limits are effectively placed on the number of fish that can be caught, enough fish are released to maintain a healthy population, and the owners carefully protect their streams and see that agricultural and grazing activities do not adversely affect the quality of the water.

In Iceland private property rights have also been extended to the common eider, a large sea-dwelling duck of the North Atlantic. The eider supplies meat, eggs, and especially eiderdown (a brownish down under the breast feathers of the female that she plucks for her nest to insulate the eggs) for the farmers and local populations. As early as 1281, the civil and ecclesiastical codes stated that the eiders "belong to the occupiers of the lands where they occurred." The farmers have protected the eider nesting colonies for centuries and actually farm them. Robin W. Doughty writes:

> Skuli Magnusson, pioneer agriculturalist and industrialist, and others, who protected and farmed the nesting places of wild eiders for down and eggs, promoted the concept of farming. In the 1770s, Magnusson protected a very large colony on the island of Videy, where reportedly he gathered and cleaned about 90 pounds of down from his "favorite" birds. On a visit to the same place in 1810, Sir George MacKenzie noted that eider ducks were "assembled in great numbers to nestle," and that severe penalties were imposed on persons killing them.[15]

The number of such farming operations grew during the nineteenth century and peaked during the 1920s, when there were more than 250 farms. Because many farmers have moved into towns, the number of farms has declined, currently totaling about 200, and eiderdown production is now about half of its peak fig-

[14]Another interesting experiment is being conducted by Maine Sea Farms, where the common property problem has been eliminated by raising the salmon in a fenced sea-water cove. They are fed a special diet of ground shrimp and crab, achieve a nearly 50 percent survival rate, and are marketed twenty months later as 9- to 12-ounce "yearlings" in the luxury fresh fish markets of the Northeast.

[15]Robin W. Doughty, "Farming Iceland's Seafowl: The Eider Duck," *Sea Frontiers* (November-December 1979), p. 346.

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ures. One result of this decline has been an increase in predation on the eiders by gulls, ravens, and feral mink and fox. Even though the number of wild predators has increased, the eider are still carefully protected on the existing farms, where property owners shoot and poison predators.

Iceland's management of the wild eider as a private property resource has been a great success. The private eider farms have benefited both the property owners and the eider population. The farmers have protected the birds from overexploitation, from poachers, and from natural predators. They have also created artificial nesting sites in which the female will nest. The combined provision of protected nesting areas and artificial nesting sites has served to maintain a thriving population.

The individual self-interest of private property owners has caused them to protect and carefully manage a valuable wildlife resource. Because private property rights were extended to the wild eider, the harvesters of eiderdown and eider eggs were allowed to manage the resource in a nonconsumptive and nondestructive manner. If they had killed the eider to obtain the down, they would have been killing the fabled golden goose. Instead, they harvested the resource on a sustained-yield basis and realized a far greater return.

If the eider had been treated as a common property resource, the only way the Icelanders could have captured any economic value from the resource would have been to take all they could before other users did the same. It would not have been profitable to wait for the eider to line their nests with down; someone else might have collected it first. The rational course of action for each user would have been to kill the eider and immediately appropriate all of the down. It also would not have been in anyone's self-interest to invest in conservation programs, such as nest site construction or predator control. All of the other down collectors would have benefited from the actions of the conservationist. We would have seen the creation of a new fable: "Who killed the eider that provided the golden down?"

It is also instructive to compare wildlife ownership and management in Great Britain with that in the United States. Throughout much of British history, the right to harvest wildlife belonged to owners of the land.[16] For centuries landowners in England were entitled by law to the wildlife on their lands. This was supported by

[16]For an important discussion of British and American wildlife laws, see Thomas A. Lund, *American Wildlife Law* (Berkeley and Los Angeles: University of California Press, 1980.)

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"qualification statutes," which determined the amount of land or income that was necessary in order to have the right to own and harvest game. The landowner owned the game, and he had the right to what was supported by his land. It was recognized that the economic incentives engendered by the right to own wildlife often led the landowners not to use their land for agricultural purposes that would be harmful to wildlife. To the extent that wildlife was valued as a source of economic gain, or even of hunting pleasure, wildlife would be protected, and it would be hunted on a sustained-yield basis to ensure the preservation of breeding stock and the continuous replenishment of the population. Landowners even employed gamekeepers who managed the game, protecting it against predators, preserving habitat, and guarding against poachers.[17]

The evidence indicates that there have been far fewer problems of vanishing wildlife in Britain than in the United States. We can still witness the benefits of the private ownership system in the management of Britain's most famous game bird, the red grouse. The opening of grouse season each August is reverently referred to as the "Glorious Twelfth." So highly prized and desired are the grouse that restaurants throughout the London area compete to see which can deliver the first meal of grouse. Commercial airlines, private jets, and even helicopters are used in the race, and the resulting roast grouse may cost $85.

The grouse are clearly a valuable resource, and they provide a substantial income to the landowners of the great estates in Scotland, where wealthy hunters gather to participate in the hunts. Reservations for the shoots are required well in advance, and social status and wealth may be necessary in order to hunt on the best and most productive lands. Landowners obviously have incentives to carefully manage the grouse on a sustained-yield basis, to keep the habitat in prime condition, to prevent the heather from being burned, to control predators, and to keep out poachers. As a result, the birds are not overexploited, in spite of heavy shooting and even though commercial marketing is allowed. Compare the results of

[17]Opponents of private ownership of wildlife have occasionally used the example of overzealous attempts by English gamekeepers to destroy all predatory species of birds and mammals as an argument against the system. However, much of that happened long before the enlightened understanding of the role of predators in the ecosystem. Furthermore, this hardly seems a convincing argument in view of the incalculable loss of predators in the United States resulting from three centuries of shooting, poisoning, and trapping of predators by local, county, state, and federal government agents, as well as an enormous payout in bounty fees by the government to private citizens for eliminating predators and "nuisance" animals.

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this system with the overexploitation of the American prairie chicken.

Unfortunately, because so much of the ownership of land in Britain, especially the great estates, was based on government grants of privilege, the landowner's property right to wildlife increasingly came under attack as a special privilege accorded to the wealthy. In the eighteenth century, the great egalitarian and democratic debates over property rights in land and wildlife resulted in America's rejection of the English system. Private property rights in wildlife and game were viewed as part of an undemocratic system emanating from government grants to the ruling classes. But in rejecting them, Americans threw out the baby with the bath water. The English system was attacked because it supposedly benefited the rich at the expense of the poor, and it was held that wildlife in America should belong to all. From the earliest time American law adopted a policy of "free taking," which recognized everyone's right to take game. Only the law of trespass kept anyone from entering another's property, and its efficacy was severely restricted by the requirement that the land be posted against hunting if the owner wanted exclusive use of it.

Thomas A. Lund essentially approves of the egalitarian approach to wildlife law. Nevertheless, he states:

> Early American law sought to dispatch the antidemocratic vices of its legacy while at the same time to preserve the system's virtues.... Following these seemingly harmless improvements to the English system, American wildlife populations fell as if afflicted by a plague. While the incursion of new settlers into habitat played a role in this decline, subsequent proof that wildlife can coexist and even thrive alongside agricultural development shows that the spread of primitive farming and ranching does not bear principal responsibility. Instead the affliction upon wildlife must be attributed to a surprising source: those democratic policies that were injected into wildlife law. Their unforeseen impact was to undercut totally the bases upon which English wildlife law had been so effective.[18]

Another especially illustrative example of private property rights in wildlife appears in the Montagnais Indians of Quebec and Labrador.[19] The Montagnais dwelled in the forests of the Labrador Peninsula, hunting such fur-bearing animals as caribou, deer, and

[18]Lund, *American Wildlife Law*, p. 103.

[19]This remarkable development of private property rights in land and especially in wildlife by an aboriginal people was first treated by anthropologists Frank Speck and Eleanor Leacock. More recently it has been subjected to economic analysis by Harold Demsetz and by John Baden, Richard Stroup, and Walter Thurman. See

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beaver. They treated wildlife as a common property resource, with everyone sharing in the bounty of the hunt. Because game was plentiful and the Indian population was relatively low, the common property resource system was able to work. "The externality was clearly present. Hunting could be practiced freely and was carried on without assessing its impact on other hunters. But these external effects were of such small significance that it did not pay anyone to take them into account."[20]

However, with the arrival of the French fur traders in the 1600s, the demand for beaver began to rise rapidly. As the value of the furs rose, there was a corresponding increase in the exploitation of the resource. Increasing use of the common property resource would have led to overexploitation of the beaver. However,

> with the beaver increasing in value, scarcity, depletion, and localized extinction could be predicted under the existing system of property rights. But unlike the buffalo, virtually condemned to extinction as common property, the beaver were protected by the evolution of private property rights among the hunters. By the early to mid-18th century, the transition to private hunting grounds was almost complete and the Montagnais were managing the beaver on a sustained-yield basis.[21]

It was a highly sophisticated system. The Montagnais blazed trees with their family crests to delineate their hunting grounds, practiced retaliation against poachers and trespassers, developed a seasonal allotment system, and marked beaver houses.

> Animal resources were husbanded. Sometimes conservation practices were carried on extensively. Family hunting territories were divided into quarters. Each year the family hunted in a different quarter in rotation, leaving a tract in the center as a sort of bank, not to be hunted over unless forced to do so by a shortage in the regular tract.[22]

This remarkably advanced system lasted for over a century and certainly served to prevent the extinction of the beaver. Unfor-

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Frank G. Speck, "The Basis of American Indian Ownership of Land," *Old Penn Weekly Review* (January 16, 1915); idem, "A Report on Tribal Boundaries and Hunting Areas of the Malechite Indians of New Brunswick," *American Anthropologist* 48 (1946); Eleanor B. Leacock, "The Montagnais 'Hunting Territory' and the Fur Trade," *American Anthropologist* 56, no. 5, pt. 2, memoir no. 78 (October 1954); Demsetz, "Toward a Theory of Property Rights"; and Baden, Stroup, and Thurman, "Good Intentions and Self-Interest."

[20]Demsetz, "Toward a Theory of Property Rights," pp. 351-52.

[21]Baden, Stroup, and Thurman, "Good Intentions and Self-Interest," p. 10.

[22]Demsetz, "Toward a Theory of Property Rights," p. 353.

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tunately, more whites entered the region and began to treat the beaver as a common property resource, trapping them themselves rather than trading with the Indians, and the beaver began to disappear. Finally, the Indians were forced to abandon their private property system and joined the whites in a rapid overexploitation of the beaver. Baden, Stroup, and Thurman sum up this sorry return to a common property system:

> With the significant intrusion of the white trapper in the 19th century, the Indian's property rights were violated. Because the Indian could not exclude the white trapper from the benefits of conservation both joined in trapping out the beaver. . . . In essence, the Indians lost their ability to enforce property rights and rationally stopped practicing resource conservation.[23]

Another example of how private ownership can successfully preserve wildlife is found on game ranches, hunting preserves, safari parks, and animal and bird farms. Many of these private ventures, especially the game ranches, were established to generate profits from private hunting. Consequently, there has been a tremendous outcry from environmentalists and conservationists because the animals are raised for profit and some of them are killed. Yet, if emotional responses can be put aside, it seems clear that these game ranches produce many positive results. Many of the animals they stock are rapidly disappearing in their native countries because of pressures resulting from a rapidly expanding human population. Native habitats are disappearing through the encroachment of agriculture, cattle grazing, timber harvesting, and desertification arising from overexploitation of common property water resources, overgrazing of grasslands, and overutilization of brush, scrub, and trees for firewood and shelter. So serious are these problems and so insoluble under a common property system that there is little hope of saving many species of wildlife in the developing countries. Indeed, some of the more spectacular and most sought-after big-game mammals may now have healthier and more stable populations on some of the game ranches than in their native countries.

As human population growth accelerates throughout the Third World, as annual incomes hover at the subsistence level, and as rising costs of petroleum and agricultural fertilizers and chemicals continue to compound the misery, fewer and fewer internal resources will be available to preserve wildlife. In spite of the noble intentions of India and some African and South American nations to preserve their vanishing wildlife, there are few signs of any real

[23] Baden, Stroup, and Thurman, "Good Intentions and Self-Interest," pp. 10–11.

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accomplishments. Impoverished people have little patience with elephants rampaging through their meager crops or with lions, cheetahs, and leopards preying on their livestock. Poachers take a terrible toll, for food as well as for ivory and spotted cat skins that bring high prices on the black market. And there is ready evidence that government officials in many of these countries, while publicly showing great concern for wildlife, are profiting handsomely from the illegal trade. If these common property resources are going to be depleted anyway, what incentives do they have to act otherwise?

Many environmentalists bemoan the fact that the once free-roaming animal herds of the African continent are now kept in captivity for the benefit of American hunters and safari park visitors. But free-roaming is a relative concept. These animals are certainly free-roaming within the boundaries of the game ranches, and many of these ranches are enormous. Furthermore, as the African plains are increasingly delimited with hostile political boundaries and with warring armies and starving populations, there seems little point in mounting campaigns against so-called immoral game ranches and preserves. The growth of agriculture and cattle ranching in these countries is also restricting the free-roaming nature of the wildlife herds.

If the profits gained by giving hunters access to exotic game can provide the economic incentive for these landowners to manage the animals on a sustained-yield basis, some species will be saved. The same holds for the profits to be derived from visitors to game parks and preserves. In fact, the protection provided at some of the parks, preserves, and gardens has actually produced a glut of some animals. There have been well-publicized efforts by some preserves to return their surplus animals to Africa. Lions from America have even been taken to Africa to appear in movies that were filmed there. While we read of zoological parks attempting to discover reversible birth control techniques in order to control their tiger populations, we continue to read about the never-ending difficulties of preserving the remaining tigers in the wild.

Perhaps we should judge all of these activities by their achievements rather than by their motives, for it may turn out that in the future the developing countries will be restocked with their native fauna from specimens now thriving on game ranches and preserves.

It is important not to cloud the issue of common vs. private property resources with philosophical judgments regarding competing economic systems or with attacks on a free-market system or profit-

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seeking activities. The books on disappearing wildlife abound with stories of captive breeding of birds and mammals and the successful preservation of species that have either become extremely rare or have disappeared entirely in the wild.

Among the many mammals in this category are Père David's deer, which does not exist in the wild and was "discovered" living in the royal zoological park in Peking. It has been saved from extinction by breeding in zoos and private parks. The European bison, or wisent, was reduced to three animals in 1927 and now survives in preserves in Poland. There are similar stories for the Asiatic lion, Prsewalski's Mongolian wild horse, the Arabian oryx, the wild ass or onager, and the Bactrian camel.

Private waterfowl breeders exist widely in many countries, and perhaps the most notable success story has been the preservation of the Hawaiian goose, or nene. Once they numbered over 25,000 in the wild, but under common property management the population had plummeted to 20 to 30 birds by 1949. Fortunately, they had been bred by aviculturists as early as 1824. A Hawaiian rancher had many on his farm, and there was a flock at the Wildfowl Trust at Slimbridge, England. Through the combined efforts of many interested parties, an intensive captive breeding program was begun in the United States and Europe, and thousands of young nenes were produced. Beginning in the 1960s, they were reintroduced to the wild in Hawaii, and by the mid-1970s there were as many as 600 in their native habitat.[24]

Many species of pheasant have always had small and local populations and would not have survived long under common property pressures. Many of the rarest species have been preserved in private aviaries and ornamental collections, with at least six endangered species being raised in captivity in the United States.

The same is true for many members of the parrot family. The familiar budgerigar, or budgie, is commonly kept as a pet in the United States and is bred in enormous numbers by thousands of breeders. Practically the entire trade is supplied by captive-bred birds. This demonstrates another conservation aspect of extending private property rights to wildlife, as captive breeding can supply the market demand for the birds and reduce or eliminate the demand on wild populations.

In all of these examples it is clear that the single most important element in wildlife survival was their removal from common prop-

[24]See David R. Zimmerman, *To Save a Bird in Peril* (New York: Coward, McCann & Geoghegan, 1975), pp. 113–29.

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erty ownership. Under private property ownership, others were prevented from exploiting the resource, and there were incentives for the owners to preserve them. Furthermore, these incentives were not solely motivated by the possibility of economic gain. With the exception of game ranches, economic gain has seldom been the primary motivation behind most captive breeding projects. Many of these examples were fostered for the pleasure of owning and breeding attractive or rare wildlife, as well as for more "altruistic" reasons, such as a deep commitment to the preservation of vanishing wildlife. Private ownership includes not only hunting preserves, commercial bird breeders, parrot jungles, and safari parks, it also includes wildlife sanctuaries, Audubon Society refuges, World Wildlife Fund preserves, and a multitude of private, nonprofit conservation and preservation projects.

The problems of environmental degradation, overexploitation of natural resources, and depletion of wildlife all derive from their existence as common property resources. Wherever we find an approach to the extension of private property rights in these areas, we find superior results. Wherever we have exclusive private ownership, whether it is organized around a profit-seeking or nonprofit undertaking, there are incentives for the private owners to preserve the resource. Self-interest drives the private property owners to careful management and protection of their resource.

It is important not to fall into the trap of believing that the different results arising from these two forms of resource management can be changed through education or persuasion. The methods of using or exploiting the resources are inherent in the incentives that are necessarily a part of each system. The overuse of common property resources and the preservation of private property resources are both examples of rational behavior by resource users. It is not a case of irrational vs. rational behavior. In both cases we are witnessing rational behavior, for resource users are acting in the only manner available to them to obtain any economic or psychological value from the resource.

It has nothing to do with the need for a new environmental ethic. Asking people to revere resources and wildlife won't bring about the peaceable kingdom when the only way a person can survive is to use up the resource before someone else does. Adopting a property system that directs and channels man's innate self-interest into behavior that preserves natural resources and wildlife will cause people to act *as if* they were motivated by a new conservationist ethic.

Any resource held in common—whether land, air, the upper at-

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mosphere and outer space, the oceans, lakes, streams, outdoor recreational resources, fisheries, wildlife, or game—can be used simultaneously by more than one individual or group for more than one purpose with many of the multiple uses conflicting. No one has exclusive rights to the resource, nor can any one prevent others from using it for either the same or any noncompatible use. By its very nature a common property resource is owned by everyone and owned by no one. Since everyone uses it there is overuse, waste, and extinction. No one has an incentive to maintain or preserve it. The only way any of the users can capture any value, economic or otherwise, is to exploit the resource as rapidly as possible before someone else does.

But private ownership allows the owner to capture the full capital value of the resource, and self-interest and economic incentive drive the owner to maintain its long-term capital value. The owner of the resource wants to enjoy the benefits of the resource today, tomorrow, and ten years from now, and therefore he will attempt to manage it on a sustained-yield basis.

Given the nature of man and the motivating forces of self-interest and economic incentive, we can see why the buffalo nearly vanished, but not the Hereford; why the Atwater's greater prairie chicken is endangered, but not the red grouse; why the common salmon fisheries of the United States are overfished, but not the private salmon streams of Europe.

It should be equally clear that the analysis applies to broader environmental issues. Many of the most beautiful national parks are suffering from severe overuse and a near destruction of their recreational values, but most private parks are maintained in far better condition. The National Audubon Society does a better job of preserving its wildlife refuges and protecting wildlife than do many federal wildlife refuges. The public grazing lands have been repeatedly over-grazed, while lush private grazing lands are maintained by private ranchers. National forests are carelessly logged and overharvested, but private forests are carefully managed and cut on a sustained-yield basis, and costly nursery tree farms have been developed. In addition, the basic concept of self-interest explains why people don't litter their own yards but do litter public parks and streets, and why people don't dump old refrigerators and tires in their own farm ponds or swimming pools, but repeatedly dump them in the unowned streams, rivers, and swamps.

Perhaps the most important treatment of the common property syndrome was that of the noted biologist and environmentalist, Garrett Hardin:

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> Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy.
>
> As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks, "What is the utility *to me* of adding one more animal to my herd?" The utility has one negative and one positive component.
>
> 1. The positive component is a function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1.
>
> 2. The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of −1.
>
> Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another. . . . But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.[25]

Unfortunately, environmentalists have either overlooked the economic analysis of common property resources or they have deliberately ignored it because of the profound difficulties it raises for a philosophy that is opposed to private ownership of natural resources and wildlife. Certainly, the former is true, but there is also evidence of the latter, since some of the more scholarly treatments of wildlife problems refer rather fleetingly to the problems of common property resources and to Hardin's analysis. But they mainly refer to Hardin when they are following his proposals for limiting human population growth to preserve the natural world. Meanwhile, the logic of the commons continues to generate a remorseless loss of the world's wildlife.

Where, then, do most environmentalists place the blame for our

[25]Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (December 13, 1968):1244.

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environmental problems? Most environmental literature and treatments by the public media consistently repeat attacks on man's greed, self-interest, consumerism, piggishness, the profit system, the market economy, and Western political, legal, economic, religious, and property institutions and beliefs. *Newsweek* points to "entrepreneurial greed." The *New York Times* mentions "commercial exploitation." Michael Satchell writes, "The road ahead seems to lead to more extinctions on the altar of consumerism.[26]

This level of thinking is especially prevalent in popular magazines published by the major wildlife, conservation, and environmental organizations, ranging from the Audubon Society to the World Wildlife Fund. A typical example, written by the editor, John Strohm, appeared in a recent isue of *International Wildlife.* He asked why there were growing problems of overfishing, overcutting, overgrazing, overplowing, and disappearing species of plants and animals. Following a discussion of too many people, too many wasteful demands, and the haves vs. the have-nots, he wrote: "We must eliminate waste . . . and adopt a more frugal lifestyle. . . . You cut a tree, you plant a tree. You catch a fish, you leave some behind so you can fish tomorrow."[27]

But even the most serious, scholarly books on wildlife conservation fail to rise much above this level. Norman Myers, in *The Sinking Ark,* writes about how we like hamburgers, our consumerist lifestyle, our desire to be consumers and fat cats, and our love of inexpensive foreign beef.[28] David Ehrenfeld, in *Conserving Life on Earth,* finds the problem to be economic success and increases in consumption. He calls for the disassociation of progress from growth, blames the pet trade, attacks private land ownership as unplanned, and points out that one of his students had discovered that people believe that China is the only country that has successfully coped with environmental problems. Ehrenfeld calls for the creation of a radically altered economic system that would produce labor-intensive and nonpolluting goods, such as guitars, rather than goods that are capital-intensive and highly polluting, such as snowmobiles.[29]

These examples make one wonder whether the intellectual

[26]Michael Satchell, "How the Smuggling Trade Is Wiping Out Wildlife," *Parade* (December 3, 1978), p. 25.

[27]John Strohm, "An Open Letter to Colleen," *International Wildlife* (September–October 1978), p. 19.

[28]Myers, *The Sinking Ark.*

[29]David W. Ehrenfeld, *Conserving Life on Earth* (New York: Oxford University Press, 1972).

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leaders of the environmental movement are more interested in a visionary society patterned after Rousseau and Thoreau than in grappling with the difficult problems of finding a method of conserving life on earth.

Two major themes repeatedly appear in the environmental literature as the source of all our problems with environmental preservation and conservation: commerce and the free-enterprise or free-market economic system. We find emotional references to the role of commerce in the overexploitation of wildlife. Victor Scheffer has written:

> By market hunting I mean the trapping and clubbing of fur-bearers, the shooting of animals for the pet-food industry, the live-capturing of rabbits for coursing, the capturing of hawks for sale to falconers, and similar pursuits of wild birds and mammals for commercial ends. The Friends of the Earth organization has already taken the position that the use of wild animal products as objects of commerce should be discouraged.[30]

In *Time of the Turtle,* Jack Rudloe describes a conversation with Dr. Archie Carr, widely recognized as the world's foremost sea turtle scientist:

> Inevitably a discussion on the morality of eating this heavenly tasting, but nearly extinct creature arose. Was it wrong to eat it when we knew the endangered status of the green turtle?
>
> "That touches on a very deep and fundamental problem," said Archie in a defensive tone. "If we had gone out and bought it, paid cash for it, and encouraged its commercial sale, then we would have been wrong. More than anything else, the commercialization of turtle meat and products has pushed the species to extinction. It isn't the Indian eating a few turtles on the beach for subsistence. At least five thousand turtles each year are being slaughtered in Nicaragua right up the coast from us. Thousands used to be shipped into the Keys for soup. And last year thirty thousand pounds of meat came in from Colombia, Mexico, and even from the Middle East to the United State. It isn't coastal people sharing the meat among themselves in the village that's the problem, it's that mass marketing that's going on in the world trade that is."[31]

However, it seems totally inappropriate to refer to the harvesting of unowned wild populations as commerce. Environmentalists and scientists make exceptions for wildlife harvesting by native populations and Indians, whether it is for food, clothing, medicine, ornamentation, religious rites and ceremonies, or for pets. Yet, when European exploration and settlement began to affect wildlife popu-

[30]Scheffer, *A Voice for Wildlife,* p. 210.

[31]Jack Rudloe, *Time of the Turtle* (New York: Penguin Books, 1980), pp. 251–52.

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lations by providing food, clothing, and ornamentation for growing settlements, it was referred to as commerce. It is somehow suggested that exchanging wildlife for money is somehow immoral.

The overharvesting of the earth's wildlife can no more be labeled commerce than the primitive gathering of wild fruits, vegetables, and grains can be called agriculture—even if those products are subsequently sold in the marketplace. Jacques-Yves Cousteau has written: "Unlike livestock rearing and fish farming, fishing and hunting are really sheer pillaging of the environment and quickly lead to the destruction of the very resources they seek to cull."[32]

The disappearance of wildlife has nothing to do with commerce or a lack of reverence for wildlife. The more rapid disappearance of common property wildlife during the past century is due to the fact that much larger human populations are using it, more efficient means of capture and kill are employed, and a larger number of uses have been found for the resources. Furthermore, many of the most populous species of wildlife had been reduced to a severely depleted state long before the development of modern business and commerce. This is especially true regarding sea turtles.

Sea turtles have been on earth for up to 100 million years and were probably one of the first wildlife foods used by man. They abounded in the warm water between the Tropics of Cancer and Capricorn. The green turtle, *Chelonia mydas,* has been called the world's most valuable species of reptile. Before Europeans arrived in the Caribbean its population was as high as 50 million. On Columbus's fourth voyage to the New World he recorded that on May 10, 1503, his ship "raised two small islands full of turtles" and the surrounding sea "seethed with turtles." He named the islands Las Tortugas.[33]

By the time the British renamed their colony the Cayman Islands the turtles were a valuable source of meat and eggs for seamen and early colonists. One scientist noted that the green turtle was the most valuable dietary factor in opening up the Caribbean, although at a heavy cost to the species.[34] Originally their numbers were so great that mariners lost in the fog could navigate by following the sound of the turtles swimming toward their breeding beaches. But decades of overexploitation rapidly depleted the population. As early as 1620 the Bermuda turtle population was so reduced that

[32]Jacques-Yves Cousteau, "The Endangered Sea," *Vision* (July-August 1974), p. 53.
[33]Quoted in Sir Alan S. Parkes, "Captive Breeding: A Double Landmark," a Mariculture, Ltd. (which later became the Cayman Turtle Farm), supplement to *The Cayman Islands Northwester,* October 1973, p. 17.
[34]Ibid., p. 7.

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the assembly passed an act prohibiting their killing. Today there are not more than a few thousand green turtles in the Caribbean and possibly no more than 400,000 worldwide. The appearance of a wild turtle in Caymanian waters is now a rarity.

The logic of the commons worked its inexorable tragedy for the green turtle long before the development of any modern commercial trade in sea turtles and turtle products, and thus it is all the more inappropriate for so excellent a scientist as Professor Carr to single out commerce as the cause of the turtles' depletion and to state: "Turtles aren't feeding protein-poor Indians, but rich gringos in high-rise hotels."[35] Clearly, the current plight of the sea turtles has nothing to do with rich gringos in high-rise hotels. Common property exploitation had nearly doomed the turtles long before Miami Beach was developed.

Many farsighted scientists and conservationists have supported the development of commercial sea turtle farms in an effort to reduce the exploitation of the remaining wild turtles. Even Archie Carr wrote:

> The one move that appears most promising as a way to accomplish the dual aim of feeding people and saving natural turtle populations is to set up turtle farms. If the teeming people of the future are to have turtle products—tortoise-shell, calipee, meat, soup, hides—they should come from captive stock. They cannot keep coming from the small, shrinking, natural populations of the world. . . . Turtle farming will be commercially profitable, however, only when it is done on a big scale.[36]

Unfortunately, following the successful development of Cayman Turtle Farm, Ltd., many American environmentalists and some scientists launched an attack on farming. Essentially they were opposed to commercial use of sea turtles and the profit-seeking nature of the farm. They also argued that it was likely to stimulate trade in sea turtles. In spite of strong support for the farm from other sea turtle experts, scientists, and conservationists, the antifarmers ultimately persuaded the United States government to ban the import of farm-bred turtle products. This followed an earlier ban on the importation of endangered wild turtle products.

The predictable result has been the increased exploitation and smuggling of a rapidly dwindling wild population. The demand for turtle products is now being met through illicit channels, that is,

[35] Quoted in Sharon Begley and Mary Hager, "The Plight of the Turtle," *Newsweek* (January 14, 1980), p. 56.

[36] Archie Carr, *The Turtle: A Natural History* (London: Cassell & Co., 1967), pp. 234–35.

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black market smuggling. It is a sad irony that while the Cayman Turtle Farm is being forced to reduce the size of its captive stock because its American markets are closed, the *Washington Star* reports that two huge shipments of illegal wild sea turtle meat have recently been seized by United States agents.[37] These shipments contained fifty-three tons of wild olive ridley meat, the results of the slaughter of nearly nine thousand irreplaceable wild sea turtles.

For some perplexing reason Archie Carr reversed his position on turtle farms, and he, David Ehrenfeld, and some of their associates have been leading the fight against farming. Rudloe's conversation with Carr concluded:

> "That's absolutely correct," Archie rationalized as we ate the last piece. "No money exchanged hands. The meat was not swapped for dollars. The soldiers divided the meat up among the villagers, themselves, their major, and ourselves. If a turtle is going to be butchered, that's the only way it should be done. That's why I'm against turtle farming. It isn't increasing the species, all it's doing is putting more commercial pressure on an already endangered species."[38]

Farming was, of course, doing precisely the opposite. The species was increased because the pressure on the remaining wild population was reduced. Further, the Cayman Turtle Farm became a closed-cycle operation and no longer needed to collect breeding stock eggs from the wild, most of which were "doomed" eggs that would not have hatched anyway because of beach erosion, harvesting by natives, or predation. The Cayman Turtle Farm achieved the first recorded instance of captive sea turtle breeding and served as a living laboratory for scientific research on sea turtle biology. Yet the more successful the farm became, the more vocal its opponents were. The farm's major markets are closed, and economic survival is in doubt. Scientists still visit the farm to carry on research, but the future of the green turtle and of all sea turtles is now dim. One of the most disheartening aspects of the antifarm campaign is that the farm has been forced to reduce its captive stock by an amount considerably larger than all the remaining wild green turtles in the Caribbean.

We can see just how counterproductive the emotional and philosophical opposition to turtle farming has been. By successfully halting the development of private farming and the extension of private property rights into the wildlife commons, environmentalists and

[37] Boris Weintraub, "The Lowly Sea Turtle vs. Man," *Washington Star*, September 16, 1980, pp. C1-2.
[38] Rudloe, *Time of the Turtle*, p. 253.

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antifarming scientists are subjecting sea turtles to the tragedy of the commons. Unless there is a rapid turnaround in their views or in the United States laws, the worldwide demand for turtle products will soon drive the remaining wild turtles to near extinction.[39]

The second common theme used by most environmentalists is the private enterprise system and the free market. Myers has written at length about the evils of the system:

> But within the American system, with its emphasis on private profit to be derived from private property, common property of society's heritage gets short shrift; farmers' interests are allowed precedence over the nation's needs. . . .
>
> The guts of the issue are that private interests do not necessarily run parallel with public interests. In certain circumstances, private interests undermine public interests. This runs counter to much conventional wisdom concerning a free-market economy, as exemplified by Adam Smith's dictum that, through pursuing his own interests, an individual is "led by an invisible hand to promote the public interest."[40]

In the concluding section of Myers's book, he develops his strategy for conservation:

> Much decline of species is due to the deficiencies and failures of the market-place system, which sometimes favors the here-and-now needs of private individuals to the detriment of long-term needs of the community in general. Moreover, the market-place tends to ignore the value of resources without a price tag. . . . Governments should step in to take account of the fact that the open market-place does not cater for all economic needs of society, and especially that the market-place ignores and even depletes the common heritage species.[41]

Ehrenfeld argues from a nearly identical position:

> The greatest barrier to the implementation of a strong and unified conservation policy is the difficulty of protecting those parts of the public domain that have traditionally been exploited

[39]The full story of this controversy is still to be discovered. The carefully orchestrated attack on the Cayman Turtle Farm as well as the apparent campaign of abuse against its supporters raise a number of disturbing questions regarding the true motives of the antifarming people. What do they have to gain by closing the farm and encouraging rapid exploitation of the few remaining wild turtles? Most people who have heard only the official antifarm party line are usually astounded when they learn the facts. Scientific objectivity has vanished in a biopolitical debate in which philosophical and personal considerations carry more importance than the facts surrounding the achievements of the turtle farm. This may prove to be a scientific scandal: America's own version of Lysenkoism.

[40]Myers, *The Sinking Ark,* pp. 88–89.

[41]Ibid., pp. 235–36.

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> by private interests. Both Keynes and later Hardin have explained that there is no logically consistent reason why an individual, corporation, or nation acting in self-interest should voluntarily abstain from exploiting the public domain even when the result will be certain destruction of the valuable features of that domain. Hardin, in fact, goes somewhat farther in "The Tragedy of the Commons" by asserting that it is usually damaging to private interests (at least in the short run) to act for the collective good as far as the commons are concerned. . . .
>
> If private interests cannot be expected to protect the public domain, then external regulation by public agencies, governments, or international authorities is needed. If that regulation is effective, the commons will be managed to provide the maximum *sustained* yield of natural products, which in turn will ultimately maximize the sum total of the profits for the various interests that rely on the commons. This concept, simple in theory, is difficult to put into practice.[42]

It is difficult to decide how to deal with Myers's and Ehrenfeld's critiques of free enterprise and the tragedy of the commons. One can understand their philosophical objection to private ownership of property and to the free-market economy, yet it is difficult to deal with their analyses of the tragedy of the commons. Nowhere does Hardin state that the tragedy of the commons is the result of free enterprise, the profit system, or the existence of private property.[43] Since common property is the antithesis of private property, there is simply no way in which private property can be the cause of the tragedy. Hardin clearly stresses that it is by treating a resource as common property that we become locked in its inexorable destruction. The conservationist-minded common property resource user has no more incentive to restrain his overexploitation of the resource than the most shortsighted and greedy common property resource user has. That is precisely why such a system remorselessly generates tragedy.

Regarding the whaling industry in the ocean commons, Hardin mentions the Japanese and the Russians.[44] But the ocean's common property resources are being overexploited by the ships of all na-

[42] Ehrenfeld, *Conserving Life on Earth*, p. 322.

[43] Discussing pollution of the commons, Hardin does say, "We are locked into a system of 'fouling our own nest,' so long as we behave as independent, rational free-enterprisers." See Hardin, "Tragedy of the Commons," p. 1245. However, it is evident that socialist and communist nations have been even less successful in solving pollution problems. See Robert J. Smith, "The Environment under Socialism," *Policy Review* 2 (Fall 1977): 113–18, for a brief review of the Soviet experience with environmental degradation.

[44] Garrett Hardin, *Exploring New Ethics for Survival: The Voyage of the Spaceship Beagle* (New York: The Viking Press, 1972), p. 121.

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tions, regardless of economic and political systems. It is certainly true that ships sailing out from the United States are seeking to take all the fish they can, but ships from socialist and communist nations are following a similar course. Indeed, because individual profit-and-loss calculations play such a small role in the economic activities of socialist nations, there is less incentive for their fleets to desist in their overexploitation when it becomes economically unprofitable than there is for a private American fishing boat. One can only conclude that writers like Myers and Ehrenfeld have either completely failed to grasp the concept of the commons or they have deliberately misrepresented it in order to support their philosophical positions.

It is true that Hardin is somewhat ambiguous in recommending a solution to the tragedy of the commons. He points out that there is no technological solution and that a political solution must be found that will create some form of ownership for the earth's resources. While he does not explicitly recommend private property rights, he appears to lean in that direction in his discussion of parks as commons:

> What shall we do? We have several options. We might sell them off as private property. We might keep them as public property, but allocate the right to enter them. The allocation might be on the basis of wealth, by the use of an auction system. It might be on the basis of merit, as defined by some agreed-upon standards. It might be by lottery. Or it might be on a first-come, first-served basis, administered to long queues. These, I think, are all the reasonable possibilities. They are all objectionable. But we must choose—or acquiesce in the destruction of the commons that we call our National Parks.[45]

At least in certain areas Hardin views the creation of private property rights as a solution: "The tragedy of the commons as a food basket is averted by private property, or something formally like it."[46]

Unfortunately Hardin swings in the other direction in his treatment of the ocean commons:

> Faced with the tragedy of the commons, we can have only one rational response: change the system. To what? Basically, there are only two possibilities: free enterprise and socialism. Free enterprise in the oceans would require some sort of fences, real or figurative. It is doubtful if we can create territories in the ocean by fencing. If not, we must—if we have the will to do it—adopt the

[45] Hardin, "The Tragedy of the Commons," p. 1245.
[46] Ibid.

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> other alternative and socialize the oceans: create an international agency *with teeth*. Such an agency must issue not recommendations but directives; and enforce them.[47]

It is possible that in perceiving the difficulties involved in solving the intricate boundary problems Hardin seems to acquiesce to some form of state or socialist ownership and control of ocean resources. Hardin does stress that our experience with the League of Nations and the United Nations gives us little hope that a system of state ownership would succeed. Indeed, the decade-long debates at the Law of the Seas conferences have repeatedly been mired over the establishment of suprastate authority over the manganese nodules carpeting vast areas of the ocean bottom – a far more tractable problem than managing the highly fugitive wildlife resources of the oceans.

However, the problem of "fencing" the seas may not be as difficult to solve as Hardin imagined. North and Miller have written:

> Notice that, until recently, it would have been immeasurably difficult, or even impossible, to maintain and enforce private rights in the ocean, but the invention of modern electronic sensing equipment has now made the policing of large bodies of water relatively cheap and easy. Through the centuries it has often become feasible for common property to give way to private property precisely because technology has made possible the enforcement of private rights (exclusivity).
>
> We are not saying that making the oceans into private property is "good." We are saying that doing so would lead to more output and fewer ecological disasters. . . .[48]

The problems of overexploitation and extinction of wildlife appear to derive consistently from their being treated as a common property resource. Example after example bears this out. It is also predicted by the economic analysis of common property resources. Both the economic analysis of common property resources and Hardin's treatment of the tragedy of the commons suggest that the only way to avoid the tragedy of the commons in natural resources and wildlife is to end the common property system by creating a system of private property rights.

Private property rights have worked successfully in a broad array of cases to preserve wildlife and resolve the tragedy of the commons. Experience and the logical implications of common property resource theory suggest that private property rights are far superior to state or public property rights partly because of the unam-

[47]Hardin, *Exploring New Ethics*, p. 121.

[48]North and Miller, *The Economics of Public Issues*, p. 112.

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biguous exclusivity of private property rights and the difficult problem of preventing too many from using the public domain under a system of state ownership. Furthermore, private property owners have a direct and immediate incentive not to mismanage their own property, while government owners or managers do not have the same incentives, nor are there many incentives that prevent all of the public from overusing the resources held in the public domain.

It seems that Hardin's proposal that resolution of the tragedy of the commons comes down to a choice between private ownership or government ownership is insufficient. State ownership appears to be little more than a more regulated commons. We witness the same overuse and destruction of the public domain as we do in the purest commons.

The proper path toward resolving the vexing issues of wildlife conservation lies in removing wildlife from common property resource treatment and creating private property rights. This entails an outright rejection of the concept that wildlife should be viewed as the common heritage of all mankind. It also poses a direct challenge to the basic philosophical beliefs of many environmentalists. But if we are to resolve the tragedy of the commons and preserve our natural resources and wildlife, we must create a new paradigm for the environmental movement: private property rights in natural resources and wildlife.

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"RESOLVING THE TRAGEDY OF THE COMMONS": A Comment

Walter N. Thurman

At the outset I think it is important to recognize a fundamental conceptual distinction. That distinction is between wildlife as an input into a production process and wildlife as an output valued by humans. The nature of economic goods is such that raw inputs are seldom valued for consumption in their original form. Some sort of entrepreneurial talent needs to be applied in order to transform those inputs into valued outputs. Even though the amenity value of wildlife often requires minimal interference with wild populations, the role of the entrepreneur is no less important here than in other production processes. Perhaps the most characteristic problem faced by a wildlife entrepreneur is how to provide human access to wildlife, so they may be seen and admired, without endangering the resource. In cases of nonamenity outputs, like the production of furs and meats, the entrepreneurial problems are more like those faced by producers of nonanimate goods.

If property rights can be established and enforced, entrepreneurial activity is rewarded and encouraged. Those incentives would very likely lead to resource arrangements that haven't yet been conceived. Smith's paper describes some marvelous examples of such solutions when the benefits from wildlife production have been capturable by the entrepreneur.

We expect good things from the market when property rights are clearly defined in both input and output markets. The commons lack such rights on the input side. As Smith clearly details, drawing from Garrett Hardin's "Tragedy of the Commons," when resources belong

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The author is a doctoral candidate in the Department of Economics at the University of Chicago, 60637.

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to all they are inevitably abused.[1] For wildlife species that abuse has often meant extinction.

The natural policy prescription for a common-property ailment is to establish property rights. But whether or not that is a practical solution is a function of available technology. It just happens to be the case that some resources are easily monitored. Chickens and green sea turtles can be farmed in pens and ownership is easily established. But wildlife species vary greatly as to their fugitive nature. For example, the various species of whales are not so easily monitored. Although technologies for keeping track of individual whales or herds are probably available, one can at least say that monitoring such beasts is much more costly than the monitoring of more sedentary, land-dwelling animals.

Certainly technology changes, and one could predict that private entrepreneurs would come up with creative means to corral effectively all sorts of wildlife. But our expectations for market solutions should be conditioned on technological and biological reality. The fact that large numbers of people place a high value on a particular resource is not sufficient to generate a workable set of property rights in that resource.

The absence of property rights on the input side leads to common-pool problems, and wildlife species vary significantly in their ownability. A separate issue is the definition of property rights at the output end. An absence of property rights here leads to the problem of public goods. If private parties provide habitat for migratory birds, they cannot exclude others from enjoying the benefits of their investment. A plausible scenario is that while the total benefits from the improved habitat are large, it doesn't pay any individual party to provide it. Here again, while many wildlife outputs are easily packageable and sold, many others, particularly the amenity values from migratory species, are not. The usual public-goods analysis applies. And we can predict the success of property rights schemes for different species based on the public-goods nature of the products they provide.

The usual analysis of market failure in the provision of public goods is often advanced in terms of organization costs. To overcome the public-goods problem in private markets, the potential consumers must be able to organize in some fashion and come up with the funds to provide the good. A common observation among economists is that organizational costs for potential consumers of wildlife and wilderness may well be high, prohibitively high.

[1]Garrett Hardin, "The Tragedy of the Commons," *Science* 162 (1968): 1243–48.

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While casual observation might lead to that conclusion, such statements strike me as mere speculation. Perhaps it is time for resource economists to consider seriously unconventional solutions to problems inherent in unconventional resources. After all, wild species are not widgets, and we shouldn't expect that they will be provided in the same manner as widgets. It may well be that the costs of voluntary organization often aren't that high. For evidence on that, Smith provides interesting examples of how organizations like the Audubon Society have overcome public-goods problems. That evidence should not be ignored.

The bottom line is a choice between a range of governmental solutions and a range of private market solutions for wildlife management. When that choice is made, the analytical qualifiers I have mentioned can be taken as arguments against market provision of wildlife.

If, on the other hand, you believe, as I do more and more, that the "creation of private property rights in wildlife" is a viable option, that they can provide protection for wildlife superior to that of public management and increase the value to humans from the use of that wildlife, then the previous analytic devices can be taken as an agenda for reform. That is, we can predict the instances in which private markets have a higher probability of success than others. As an incremental step we should push hard for establishment of private property rights in species where we are confident of such success. Smith's paper, as well as being delightful reading, is an example of good empiricism toward that end.

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PARKS, PROPERTY RIGHTS, AND THE POSSIBILITIES OF THE PRIVATE LAW

James P. Beckwith, Jr.

It is commonly assumed that private property rights are incompatible with the preservation of such environmental and recreational amenities as our national parks and that governmental ownership is therefore required. This paper takes a different approach and argues that private alternatives to public ownership of parks are legally feasible and are desirable on both efficiency and ethical grounds.

Although this paper is concerned with legal issues, every effort has been made to make it accessible to a general audience. Even so, the discussion should interest lawyers, both practitioners and academicians. Indeed, it is vitally important that it do so. Because of their preoccupation with public solutions, lawyers have contributed to the decline of public discourse on law and social policy. Often led by professional self-interest, theirs is an enthusiasm for complex public solutions that resort to law and for traditional distinctions of legal scholarship that often obscure rather than illuminate. As Friedrich Hayek, perhaps our premier scholar of spontaneous common-law adjudication, admonishes us, the preservation of a free society requires more than the simplistic espousal

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The author is Associate Professor of Law at North Carolina Central University, Durham 27707. He is especially grateful to Terry Anderson for his valuable assistance on early drafts of this paper and would also like to acknowledge the helpful comments of John Baden, Patricia Marschall, Allen Parkman, Michelle Rippon, and Richard Willke.

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of abstract principles.[1] It requires careful thought about specific legal arrangements that will foster that delicate balance between deliberation and spontaneity that lies at the heart of a free legal order.[2]

The organizing principle of this paper is one of ascending radicalism: from reform through volunteerism and privatization of services to the outright abolition of public ownership and the transfer of the parks to private parties. The transition to a freer legal order is not costless, however, and a prescription for change must be tempered with a sensitivity to the capacity for change of the existing legal order.

Governmental ownership of parkland is a relatively recent phenomenon. Prior to the late nineteenth century, the principal objective of government had been to sell and later give away as much of the public lands as possible.[3] Toward the turn of the century, however, a new sense of scarcity arose because of the perceived depletion of natural resources.[4] Theodore Roosevelt, for example, enthusiastically embraced the views of early advocates of a national park system, including Gifford Pinchot and Gilbert Grosvenor.[5] The National Park Service was subsequently created in 1916, although some parks, such as Yellowstone, had been authorized by Congress as early as 1872. In addition to this new sense of scarcity, the conservation movement was inspired by the egalitarianism of populism.[6] The Populists demanded that the remaining public

[1] Friedrich Hayek, *Individualism and Economic Order* (Chicago: University of Chicago Press, 1948), p. 111.

[2] William L. Letwin, "The Achievement of Friedrich A. Hayek," in *Essays on Hayek*, ed. Fritz Machlup (Hillsdale, Mich.: Hillsdale College Press, 1976), p. 162.

[3] For discussions of public land policy prior to the rise of the conservation movement, see Lawrence M. Friedman, *A History of American Law* (New York: Simon and Schuster, 1973), pp. 202-5, 361-67; Everett N. Dick, *The Lure of the Land* (Lincoln: University of Nebraska Press, 1970); Paul W. Gates, *History of Public Land Law Development* (Washington, D.C.: Government Printing Office, 1968); Benjamin H. Hibbard, *A History of the Public Land Policies* (New York: Peter Smith, 1924); Jonathan R. Hughes, *The Governmental Habit* (New York: Basic Books, 1977), pp. 13-23, 50-61; Malcolm J. Rohrbough, *The Land Office Business: The Settlement and Administration of American Public Lands, 1789-1837* (New York: Oxford University Press, 1968).

[4] Friedman, *A History of American Law*, pp. 361-67; Hughes, *The Governmental Habit*, p. 97; Dwight R. Lee and Robert F. McNown, *Economics in Our Time: Concepts and Issues* (Chicago: SRA, 1975), pp. 131-32.

[5] See Gifford Pinchot, *Breaking New Ground* (New York: Harcourt Brace, 1947), pp. 509-10; Theodore Roosevelt, *Autobiography* (New York: Charles Scribner's, 1913), p. 409; Gifford Pinchot, "How Conservation Began in the United States," *Agricultural History* 11 (October 1937): 262-63; Melville Bell Grosvenor, "A Long History of New Beginnings," *National Geographic* 156 (July 1979): 18.

[6] John D. Hicks, *The Populist Revolt* (Minneapolis: University of Minnesota Press, 1931), pp. 420-21; Hughes, *The Governmental Habit*, pp. 105-6.

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lands be withdrawn from the market and reserved for conservation. Today most parks are publicly owned. The national park system includes over seventy million acres,[7] state parks account for nearly ten million acres, and country and municipal parks add approximately one million acres.[8]

Most governments charge a zero or less-than-equilibrium price for access to public parks.[9] Predictably, with the quantity demanded exceeding the available supply, a "shortage" develops, and public parks are usually overcrowded. Overcrowding contributes to deterioration and erosion and, as nonprice competition for limited space increases, illegal camping.[10] Overcrowding and deterioration also encourage the subsidized and crowded recreationists to demand that existing parks be expanded and new ones created. Vote-maximizing politicians will thus have an incentive to expand further the scope of subsidized recreation, while those taxpayers paying its diffuse costs will have little incentive to resist its being given. To be sure, other allocative criteria, such as rationing by reservation, lottery, or queuing, would generate different incentives for benefited client groups.[11] It remains, however, that suboptimal pricing is the fundamental cause of overcrowding.

Not only are public parks overcrowded, they do not distribute

[7]U.S. Department of Commerce, *Statistical Abstract of the United States* (Washington, D.C.: Government Printing Office, 1979), p. 239. The total acreage was more than doubled on December 1, 1978, when President Carter added over 40 million acres of public domain in Alaska by declaring them national monuments under authority of the Antiquities Act of 1906, 16 U.S.C. §§ 431-33 (1976). This further politicization of property rights in favor of environmentalists has been greeted with great hostility by many Alaskans.

[8]Ibid., p. 241.

[9]Armen A. Alchian and William R. Allen, *University Economics,* 3d ed. (Belmont, Calif.: Wadsworth, 1972), p. 154. Recently, perhaps in response to the aging of the American population and the growing political influence of older voters, at least fourteen states (Arkansas, Delaware, Indiana, Louisiana, Massachusetts, Montana, Nevada, North Dakota, Oklahoma, Rhode Island, South Carolina, Tennessee, Texas, and Utah) have by statute set a zero or reduced price for older residents for access to state parks. The National Park Service set a reduced price for the elderly through its Golden Age passport program. See also U.S. Department of Interior, National Park Service, *Camping in the National Parks System* (Washington, D.C.: Government Printing Office, 1979).

[10]For a description of the problems of overcrowding, see "Crowding and Decay Threaten U.S. Parks," *New York Times,* August 3, 1980, pp. 1, 40; and Frederick L. Campbell, John C. Hendee, and Roger Clark, "Law and Order in Public Parks," *Parks and Recreation* 3 (December 1968): 28.

[11]George H. Stankey and John Baden, "Rationing Wilderness Use: Methods, Problems, and Guidelines," Research paper INT-192 (Ogden, Utah: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station, July 1977), pp. 6, 7, 8, 14.

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their benefits randomly. With their high costs of access, remote wilderness parks present the most extreme examples of a subsidy for the affluent.[12] Of course, not all public parks are inaccessible. Access to public parks in urban areas is much less costly for most people, and the relatively inexpensive recreational pursuits offered there require few accoutrements. A pair of tennis shoes and a frisbee are much less of an impediment to recreation than mobile recreation vehicles and the L. L. Bean catalog. As a result, city parks are more likely to have a lower-income client group than are wilderness parks. Furthermore, some nonrecreational uses of city parks (e.g., commerce in drugs or provision of shelter) can also be attributed to suboptimal pricing for entry. In light of these shortcomings resulting from the absence of private property rights, privatization of the parks offers a means of much-needed reform.

Parks and the Independent Sector

There is no presumption that those who work in publicly owned parks must be public employees. Accordingly, the most tentative step in the privatization of public parks would be to increase the recruitment of volunteers to help manage the parks, particularly in the more accessible municipal parks. This practice is already widespread.[13] Indeed, volunteers have long been a vital part of public recreation in America, continuing the tradition of volunteerism and free association so ably described by Alexis de Tocqueville.[14] They form but another example of the independent sector, neither governmental nor commercial, that is grounded in voluntary, private action.[15] The primary benefit of volunteerism is, of course, the provision of labor at a zero price to the agency. No tax revenues need to be collected to pay for volunteered services. Furthermore, volunteers have less incentive to engage in the kind of political entrepreneurship so characteristic of bureaucracies.

[12] Edwin G. Dolan, *TANSTAAFL: Economic Strategy for Environmental Crisis* (Hinsdale, Ill.: Holt, Rinehart & Winston, Dryden Press, 1971), p. 94; John Baden, "Neospartan Hedonists, Adult Toy Aficionados, and the Rationing of Public Lands," in *Managing the Commons,* ed. Garrett Hardin and John Baden (San Francisco: W. H. Freeman, 1977), pp. 250–51.

[13] U.S. Department of the Interior, *Heritage Conservation and Recreation Service: Volunteer Handbook* (Washington, D.C.: Government Printing Office, 1978); Richard Kraus, "An Urban Alternative: Making Do with Volunteers," *Parks and Recreation* 12 (March 1977): 35.

[14] Alexis de Toqueville, *Democracy in America,* ed. Phillips Bradley (New York: Vintage Books, 1954), p. 198.

[15] For a description of the independent sector, see the remarkable book by Richard Cornuelle, *Reclaiming the American Dream* (New York: Random House, 1965), pp. 20–41.

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There is no significant legal impediment to volunteerism. One should, however, expect opposition from park personnel and their unions should it become apparent that volunteers are precluding the hiring or retention of salaried employees. Few people welcome competition of any sort, especially that charging a zero price.

Volunteerism, however, must always be examined in the context of the incentives generated by the political process. Political entrepreneurs in quest of votes from rationally ignorant voters tend to favor inflationary policies with clearly recognizable benefits and partially concealed costs.[16] In their early stages, inflation and "bracket creep" will very likely lead to a lessening of volunteerism within the independent sector because there is an incentive created for individuals to work longer hours and for both spouses to work in order to maintain their standard of living. As the amount of time available for volunteer activities decreases, there will be fewer volunteers available to help with recreational programs in the public parks.

In the short run, in the face of inflation and higher taxes, the incentive to work is still sufficiently strong that the attempt to maintain a standard of living would lead to the atrophy of volunteerism; however, should marginal tax rates rise further, the work incentive may be largely destroyed. As a result, the consumption of recreation may become widespread, as in contemporary Sweden, thereby enlarging the recreation constituency. Because of lessened incentives to maintain taxable income, this induced consumption of idleness could conceivably lead to a resurgence of volunteerism, albeit at a very high cost to societal productivity. Recreation and volunteerism grounded in prosperity-generated leisure is far preferable to that inspired by the futility of working.

Governmental expansion is not inevitable, and increased taxation carries with it the risk of taxpayer rebellion. To be sure, given the concentrated benefits and diffuse costs of governmental regulation,[17] it is not surprising that political entrepreneurs give

[16] Rational voter ignorance stems from an individual voter's recognition that his vote will have little impact on the outcome of an election. He has little incentive to incur the information costs of being informed on political matters, and it is rational for him to remain uninformed or rely on the low-cost provision of information by the various media. See James Gwartney, *Microeconomics* (New York: Academic Press, 1977), pp. 333–34.

[17] The concentrated benefits of regulation make it natural for producers, unlike consumers, to intervene in the political process because the benefits obtained exceed the costs of intervention. It is irrational for consumers to lobby against the subsidy because the cost of doing so exceeds the tiny benefits that would accrue to each con-

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voter coalitions what they want in return for electoral support. As was shown in California with the passage of Proposition 13, however, taxation may reach a level where the heretofore diffuse costs of government become sufficiently concentrated that the free-rider problems are overcome and the voters demand a reduction in expenditures. The California experience has had a dramatic impact on its public parks. With public expenditures for recreation reduced, park administrators have turned to the private sector for support and have relied more on the price system through the privatization of services and user fees. It is to such moderate reforms that we now turn our attention.

Privatization of Services

At present, many supporting services in the public parks are provided by governmental agencies. This governmental service monopoly dates from the Progressive Era, when many national parks were established and the municipal reform movement was at its height.[18] The monopolized park services are varied but typically include grounds maintenance and repair, refuse collection, and maintenance of special recreational facilities, such as tennis courts and swimming pools. Obviously it is not necessary that governmental agencies provide these services. Indeed, many private firms provide identical services to their customers, often at a lower price. In light of the widespread dissatisfaction with governmental services, privatization is a promising avenue for reform for the public parks, one that has been demonstrably successful in recent years.

At the outset, one should have a clear idea of what privatization means because this term can refer to a variety of strategies.[19] For our purposes, it will be assumed that public ownership of parks will continue and that privatization entails the contracting out of support services to private firms operating for profit. By contracting out, the governmental unit has not shed its responsibilities for providing park services. It has, rather, by means of traditional con-

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sumer, and any resulting benefits would be shared by all consumers, not just those opposing the transfer. As a result, the amorphous consumer interest is systematically underrepresented. See Allan H. Meltzer, *Why Government Grows* (Los Angeles: International Institute for Economic Research, 1976); Richard A. Posner, *Economic Analysis of Law*, 2nd ed. (Boston: Little, Brown, 1977), pp. 239–70.

[18]Lawrence White, "Privatization of Municipally-Provided Services," *Journal of Libertarian Studies* 2 (1978): 187.

[19]For discussions of varying degrees of privatization, see Robert W. Poole, *Cutting Back City Hall* (New York: Universe Books, 1980), pp. 26–27; White, "Privatization," pp. 187–88.

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tract-law principles, allocated its tax revenues to a low-bidding private firm rather than to its own employees.[20]

If services are contracted out to profit-motivated private firms, considerable costs savings result.[21] Unlike a governmental bureaucracy, which has little incentive to hold down costs, competitive private firms are driven to minimize costs in order to survive and prosper in the marketplace. Public parks can only benefit from this wider range of potential suppliers and their impetus toward efficiency. In addition, contracting out obviates the need for specialized but rarely used services and large initial capital investments in plant and equipment.[22] Not all persons, however, welcome the advantages of private contracting. Public-employee labor unions, for example, have bitterly opposed the contracting out of governmental services.[23] Given the general disinclination of the comparatively inefficient to welcome more efficient competitors, such opposition is not surprising. Even if services are contracted out, however, the public parks will remain partially politicized because the level of services will still be a political question. On the other hand, relying on private firms reduces the number of potential political entrepreneurs who might otherwise pursue coalition profit.

From a procedural standpoint, the privatization of services will have significant legal consequences. Because governmental units will be awarding contracts to low-bidding firms, the privatizing agreements will be subject to the requirements of government contracts generally, especially those governing the bidding process. Although these regulatory provisions are complex and apply to all levels of government, the burdens presumably would not outweigh the efficiency gains to be made from contracting with competitive private firms. However, any advocate of privatization of services by contract must deal with the problem of collusion.

It is well known that governmental buyers are especially vulnerable to collusive sellers. First and most important, public administrators have little incentive or reward for economizing by obtaining goods and services from competitive sellers. Second, so long as sealed bids are solicited by formal advertisement and opened simultaneously with no rebidding allowed, the vulnerability of governmental buyers will be enhanced.[24] The sellers' incentive to

[20] White, "Privatization," p. 187.

[21] Poole, *Cutting Back City Hall,* pp. 27, 105–6.

[22] Ibid., pp. 28–29.

[23] "Contracting Out Is Cheaper for City, But Unions Are Very Upset," *Washington Post,* November 5, 1980, p. B1.

[24] Alchian and Allen, *University Economics,* p. 355.

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collude is strengthened because bidders are given no chance to undercut each other, and the policing of cheaters who offer bids lower than the agreed price is simplified because all bids are usually revealed at the time the low-bidding firm is awarded the contract.

How might privatized services for the public parks be obtained by a method of procurement that fosters competition? So long as public ownership continues, one cannot be overly optimistic about the prospects for a reduction in governmental vulnerability to collusion. Indeed, the weak incentives and meager rewards for economizing by public managers make private ownership all the more compelling. If the parks were privately owned, their managers would have a very strong incentive to obtain goods and services from competitive sellers. Such managers would have every reason to forcefully "put the squeeze" on the seller simply by informing him of their unwillingness to reveal their best offers from competing sellers.[25]

Although private ownership offers the best avenue for undermining the sellers' collusion, some arguments for reform within the context of public ownership have been made. One possible approach would require the opening of all bids simultaneously, revealing only the name of the low-bidding firm and deferring until later the revelation of its bid. Meanwhile, the losing firms would be invited to submit further bids in hopes of undercutting the apparent winner. In order to encourage new entrants for subsequent projects, along with rivalry among the already competing firms, the bids of all the losing firms might also be revealed while the winning low bid was still concealed.[26] It has also been suggested that renegotiation should be mandatory when formal advertising produces identical low bids from few suppliers.[27] With greater secrecy surrounding the winning bid, the incentives for dishonesty of governmental procurement officers are increased. Accordingly, a reward system for the discovery and reduction of collusion might possibly alter these incentives and encourage a more competitive bidding system.[28] If the bidding process is reformed while public ownership continues, then the efficiency gains from the minimization of collusion might possibly complement the gains stemming from the purchase of supporting park services from profit-moti-

[25] Arman A. Alchian, *Economic Forces at Work* (Indianapolis: Liberty Press, 1977), pp. 259–69.

[26] Richard A. Miller, "Economy, Efficiency and Effectiveness in Government Procurement," *Brooklyn Law Review* 42 (1975): 208, 228–29.

[27] Ibid., p. 227.

[28] Ibid., pp. 239–40.

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vated private firms. The surest way to obtain competitive prices from sellers, however, is to turn the parks over to private managers.

User Charges

As has been noted, the low cost of visiting parks has led to overuse and deterioration. Even with continued public ownership of the parks, this suboptimal pricing is not inevitable. Indeed, if equilibrium prices were charged for access to the parks or for particular services within the parks, much could be done to ameliorate present conditions.

With the payment of a user fee, the consumer pays for a service in much the same way as in the private sector; and in the case of the public parks, the incentives for park users are drastically altered. In the absence of user fees, the public parks are financed out of general tax revenues. Park users thus have an incentive to lobby for increased appropriations for public parks in the rational expectation that the bulk of these costs will be borne by the majority of taxpayers who rarely use the parks. As a result of these incentives, more public expenditures are made for parks than would otherwise be made. The user fee internalizes these costs and introduces important economizing incentives by imposing the cost of the parks directly on the park user. If the price of recreation is raised, less of it will be demanded by consumers and overcrowding in the parks will be reduced. In addition, the payment of user fees is a precise indication of consumer preference that will generate useful information on just how much people actually value the competing uses of the parks, and one could expect an increase in park uses that people are willing to pay for.[29] It has also been suggested that the user fee is a more equitable allocative device because it eliminates cross-subsidies within a given community or by one community of nonresidents.[30]

User fees in public parks (and in privately owned parks, as will be discussed later) are feasible only if nonusers can be excluded from users. It is one thing to define property rights in a park;[31] it is quite another to transfer those property rights to fee-paying consumers. It is essential that property rights in the parks be defined,

[29] See Richard Stroup and John Baden, "Externality, Property Rights, and the Management of our National Forests," *Journal of Law and Economics* 16 (1973): 303.

[30] Poole, *Cutting Back City Hall,* p. 33.

[31] The term "property right" refers to the ability to control the use of a given resource. It does not have any legal connotations of real estate but refers rather to the total body of substantive law. See Alchian and Allen, *University Economics,* p. 142.

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transferred, and enforced because it is by the alleged inability to exclude nonusers that public control and the avoidance of user fees can be justified, if at all.[32]

In most national parks and in some municipal parks, entrance by users is monitored, and very low fees are charged for entry. In most municipal parks, entry is not monitored, and the cost of entry is zero. This does not mean that monitoring could not occur. For most parks, particularly those in wilderness areas and those urban parks with few entrances on public roads and city streets, the transaction costs of monitoring and charging for entry are low enough that exclusion of nonusers is feasible.

To be sure, in a few cases the exclusion of nonusers may not be feasible because of multiple access. City parks with multiple entrances on public streets present particularly difficult problems.[33] Should the imposition of user charges for these city parks require the closing of intersecting streets in order to preclude free riders and reduce the transaction costs of monitoring entry, one could expect inconvenienced motorists to join subsidized recreationists in opposition to the proposal. Similarly, merchants dependent on walk-in patronage attracted by the suboptimal pricing of nearby public parks would also object.

Although exclusion of nonusers is usually feasible and one is able to demonstrate the benefits resulting from equilibrium pricing, market-clearing prices are rarely, if ever, charged for access to public parks. Why are the prices so low? This suboptimal pricing is in large part attributable to the incentives of political entrepreneurs to subsidize voters who consume recreation. Under federal law, for example, the fees charged for access to the national parks must be "fair and equitable."[34] It is not surprising to discover that this means

[32] According to Milton Friedman, public ownership would be justified in such a case because of the difficulty of identifying and charging the beneficiaries. See Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962), p. 31.

[33] One example might be the Chattanooga Memorial Park surrounding the city of Chattanooga with entrances from city streets and county and state roads. See William J. Whalen, "Proposal to Increase Entrance and Users Fees within the National Park System," *Hearings Before the Subcommittee on Parks, Recreation, and Renewable Resources of the Senate Committee on Energy and Natural Resources,* 96th Cong., 1st sess., 1979, p. 49.

[34] U.S.C. § 460l-6a(d) (1976). The statute also directs that the agency take into consideration the "direct and indirect cost to the Government,the benefits to the recipient, the public policy or interest served, the comparable recreation fees charged by non-Federal public agencies, the economic and administrative feasibility of fee collection and other pertinent factors."

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that the prices charged are very low. Any realistic approach to reform must grapple with this strong sense of entitlement.

Up to now the discussion has focused on reform within a context of state ownership. It was assumed that the state would retain title to the land and that reform would be aimed at encouraging prosperity-based volunteerism, improving the efficiency with which public funds were expended for supporting services, and enhancing the environment by rationing access through user fees. While these reforms are certainly desirable, they do not address the fundamental question of how best to structure the ownership of the parks in order to preserve their natural beauty.

Private Ownership Considered

Who should own the public parks? At present the parks belong to "the people." Although at first glance this is a rhetorically reassuring notion, it cannot withstand analysis. The public parks "belong" to those persons who use them, and that is only some of "the people."[35] It need not be this way. The parks may be privately owned as, indeed, many recreation areas already are. Existing public parks could either be given away or sold to the highest bidder.[36]

What would be the consequences of such a transfer of title?[37] At the outset one should recognize that privately owned parks charging admission fees face the same problem of exclusion of nonusers as would a public park. Similarly, however, the transaction costs of excluding nonusers are usually low enough that private admission fees are feasible. Assuming that one successfully crosses the transaction-cost hurdle, the benefits of freely transferable property rights in private parks would be quite similar to those discussed earlier in a context of charging market-clearing user fees. By forcing the consumer of park amenities to pay directly for indulging his preferences, free exchange would introduce important economizing incentives on the consumption of recreation. Because demand curves do slope downward, private parks would avoid major problems of overcrowding and degradation, and the private firms operating the parks would have every incentive to preserve their beauty in order to attract customers. The payment of admission

[35]One enticing myth is the notion that conservation of parks and wilderness is the common concern of all mankind. This argument is used primarily to persuade the majority of nonconservationist taxpayers to pay for the special interest of conservationists. See Dolan, *TANSTAAFL*, pp. 86–88.

[36]In a manner perhaps reminiscent of the Homestead Act of 1862. See Hughes, *The Governmental Habit*, p. 59.

[37]The following discussion derives in part from Stroup and Baden, "Externality."

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fees would generate information on consumer willingness to pay for park services, and those park services that were preferred would be provided.

Privatization of the ownership of public parks would, however, have consequences that go far beyond those resulting from the mere charging of market-clearing user fees.[38] Government would have shed its responsibilities entirely and would no longer be in the park business. If the parks were given away, the recipients would receive a revenue windfall when they, in turn, sold their land. If the parks were sold to the highest bidder, the government would enjoy the revenue windfall. In addition, because private firms respond to consumer preference, the parks would become much more diverse as each entrepreneur sought to satisfy as yet unmet consumer willingness to pay. Individual liberty would also be enhanced because the provision of private parks would rest on the consent of the contracting parties.

Given the response of private parks to consumer preference, what kind of parks would consumers prefer and be willing to pay for? Some newly privatized parks, particularly those in or near urban areas, would undoubtedly be redeveloped for mass recreation. Some urban parks might even cease to be parks at all because recreationists might not be willing to pay enough to bid away the land from alternative uses. On the other hand, much park land would remain untouched because of the willingness of consumers to pay for access to wilderness. While the precise allocations must admittedly be unknown because of the prevailing suspension of the market mechanism, the probable general trends are predictable.

Private Ownership and the Law

It is one thing to describe the benefits of private ownership of parks. It is quite another to describe its legal foundation. For that one must turn to the complex rules and distinct concept of ownership in real-property law. The Anglo-American law of real property has its origin in the elaborate system of reciprocal political responsibilities of English feudalism.[39] During the early Middle Ages, land was not "owned"; rather, it was "held" on good behavior, with the king theoretically being the ultimate owner. As a result of its de-

[38]See ibid., pp. 309–10.

[39]See Cornelius Moynihan, *Introduction to the Law of Real Property* (St. Paul, Minn.: West Publishing Co., 1962), pp. 1–27; and Theodore F. T. Plucknett, *A Concise History of the Common Law*, 5th ed. (Boston: Little, Brown & Co., 1956), pp. 505–45.

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pendence on tenure relationships, the common-law system of estates is one of ownership divisible in time.[40]

What do we mean by speaking of ownership in durational terms? Simply, that the total ownership of a parcel of land may be divided like a bundle of sticks in order to set up a queue. The whole bundle represents total and complete ownership of the land. Because the bundle is divisible, however, different people with different sticks may be entitled to exclusive possession of the same land at different times. Exclusive possession of the land today (by means of a stick known as a present estate) does not necessarily guarantee exclusive possession tomorrow (by means of a stick known as a future estate). This does not mean that the person enjoying the land now is any more of an owner than the person who will enjoy the land later. It just means that the division of the sticks has set up the queue, and each person must wait his turn. The owner of the stick of a future estate must wait until his possession becomes operative after the person with the other stick gives up present possession. Furthermore, everyone in the queue will be protected by the courts. Because both persons are owners of valid estates (one present, the other future), the courts will protect both rights today regardless of when possession occurs. By thinking of this bundle of sticks, one can more readily understand the admittedly conceptual common-law approach to estates, where what matters is the time at which one is entitled to exclusive possession of the land.

Private Ownership in Fee Simple Absolute

Assume that one wanted to create a private park. What would be its legal foundation? The most obvious response would be that one would want complete ownership of the land outright. Accordingly, one would want the whole bundle of sticks. In order to enjoy the whole bundle, the owner of a private park must have title in fee simple absolute.

The fee simple absolute is the largest estate known to Anglo-American law[41] and represents the ultimate in ownership.[42] It cor-

[40]Thomas F. Bergin and Paul G. Haskell, *Preface to Estates in Land and Future Interests* (Brooklyn: The Foundation Press, 1966), pp. 3–7. The following discussion borrows heavily from the same, pp. 23–26.

[41]Ibid., pp. 26–31; John E. Cribbet, *Principles of the Law of Real Property,* 2d ed. (Mineola, N.Y.: The Foundation Press, 1975), pp. 40–42; and Moynihan, *Law of Real Property,* pp. 29–35.

[42]This is not to say that the fee simple has not been diminished by the recent advent of public regulation in the guise of the police power. See, for example, Harry M. Cross, "The Diminishing Fee," *Law and Contemporary Problems* 20 (1955): 517. Furthermore, the holder of a fee simple absolute in the United States is subject to the

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responds to our commonsense notions of ownership and can be freely sold or inherited. Because the owner of the fee simple absolute has the whole bundle of sticks,[43] he enjoys possession that is of potentially infinite duration. To illustrate: The owner in fee simple absolute of a beautiful meadow can, subject to the police power or private promises, control its use, and if he is so inclined he can preserve the meadow in its natural state for use as a park for himself or anyone he chooses. As holder of the entire bundle of sticks, the owner decides. Ownership in fee simple absolute has the virtue of simplicity of administration, because one need be concerned only with the present preferences of the owner. In addition, title in fee simple absolute generates the needed incentives for careful husbandry of the land because the residual claimant is the person having title.

But what happens in the future? Perpetual stewardship grounded solely in fee-simple ownership is not feasible because of the inevitability of the owner's death. How might a holder of a fee simple absolute perpetuate the stewardship of his land?

One way would be to transfer the meadow to a perpetual legal entity that shares the transferor's preferences for the use of the land. A private for-profit recreation firm with perpetual existence could continue to husband the land as part of its enterprise. A conservationist-entrepreneur could run the park as a business that continues after his death. Direct ownership in fee simple would be well suited to such an enterprise and would enhance the reduction in transaction costs associated with for-profit firms.[44] Assuming that consumer preference favored the consumption of park recreation, the firm would have every incentive to preserve the beauty of the meadow because in the absence of such husbandry it would be unable to attract customers. The private firm would thus bring about all the benefits of private ownership and perpetuate them long after the death of the original owner.

A private park owned in fee simple absolute could be managed in a variety of ways. For example, the corporation could hold title to the land and charge admission. Under traditional tort principles the firm

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payment of applicable property taxes to the state. For a description of the evolution of land ownership in the United States, see Hughes, *The Governmental Habit*, pp. 15–21.

[43]The conveyancing rules governing the creation of a fee simple have been simplified in modern times. At present, a conveyance "to A" will transfer a fee simple absolute, although in some states the older formula of "to A and his heirs" may still be necessary. See Cribbet, *Principles of the Law of Real Property*, pp. 41–42.

[44]See Posner, *Economic Analysis of Law*, pp. 289–90.

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would owe a duty of reasonable care to the ticket purchaser who would be an "invitee." The firm could monitor entry at the gate and ration access to a wide variety of activities and amenities.[45] Park visitors could be required to carry appropriate nontransferable permits, such as hiking or fishing stamps. The firm could issue stamps for such pursuits as spelunking, bird watching, fishing, hunting, or skiing. The stamps, in responding to the sensitivity of the price system, would be as diverse as consumer preference could make them. The gate fee could cover such hard-to-charge-for amenities as the sky, broad vistas, and fragrant flowers. Specific fees might then be charged for particular amenities, such as caverns, geysers, and waterfalls. In this way, the cross-subsidization of consumers of particular amenities by nonusers could be reduced to a minimum.

Alternatively, ownership could be divided among the customers with each person owning an undivided proportionate share.[46] With this approach, called a tenancy in common, each of the owners, called tenants, is entitled to possession of the entire park subject to a reciprocal right in his cotenants. Under such an agreement, the legal relations among the owners become very important, and, in dealing with the common property, the tenants in common owe a duty of good faith to one another.

On the nonprofit side, the meadow could be conveyed to a self-perpetuating conservation organization chartered as a charitable corporation under applicable state law.[47] The organization's board of directors could then choose as successor members only those persons who share the preferences of the original grantor. Of course, the conservation organization would bear the cost of preserving the land because it presumably would not be charging fees for access to the land.

Ownership in fee simple, however, can be a burdensome and costly means of preserving natural areas. Although it is feasible for the establishment of private parks by for-profit firms or conservation organizations that are able to attract sufficient capital, ownership of the whole bundle of sticks can be beyond the capacity of

[45]The following owes much to conversations with Terry Anderson. For a general discussion of legal aspects of parks and recreation areas under private control, see 4 Am.Jur.2d, Amusements and Exhibitions (1962 & Cum. Supp. 1980).

[46]See Moynihan, *Law of Real Property*, pp. 224–29.

[47]One frequently cited example is the Nature Conservancy. Such an example is apposite to the extent that it retains title to and privately manages its own lands, and no one denies the great benefits that come from the Conservancy's private stewardship of land and wildlife. All too often, however, the Conservancy transfers title to its land to a governmental agency, thus negating the benefits obtained from private ownership.

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some individuals. On the other hand, property owners can use less-than-fee property interests to preserve natural areas privately; that is, they can divide up the bundle of sticks instead of keeping it all.

Qualification of the Fee Simple

Ownership in fee simple absolute is not necessary to ensure the preservation of the meadow. Absolute fee-simple ownership is theoretically of infinite duration, and the owner's preferences are paramount. If the owner who wished to preserve the meadow could cut off the otherwise infinite duration of the subsequent owner's ownership if he did not preserve the land in its natural state, the first owner could exert a significant degree of control over the future use of the parcel. Because of the time horizon resulting from the historical development of the common-law scheme of estates,[48] the first owner can indeed control the future use of the land by retaining one of the sticks from the bundle (known as a future estate) when he conveys the meadow. By retaining one stick, the first owner enjoys a privilege of possession of the meadow in the future that is given present protection, notwithstanding his conveyance of the rest of the bundle to the subsequent owner. The grantee, on the other hand, does not receive the whole bundle of sticks of a fee simple absolute. Rather, he receives a bundle that is tied by a string to the first owner's stick, with the market price presumably reflecting this diminution of control.

If the grantor's purpose is the preservation of the meadow, then the conveyed bundle can be forfeited upon the happening of a specified event, e.g., the development of the meadow or destruction of its natural amenities. Two varieties of bundles (known as qualified fees) may be employed, each tied to its own associated future estate to be retained by the grantor. For example, he can convey a bundle known as a fee simple subject to a condition subsequent and retain a stick on a string known as a power of termination.[49] Thus A, the owner of the meadow, could convey the land to B and his heirs on condition that if the meadow is ever developed, A and his heirs may reenter and possess the premises. Should the meadow be developed, A or his successor in interest has the power to pull the string and retrieve B's bundle by any appropriate act,[50] after which that

[48]Lewis M. Simes, *Handbook of the Law of Future Interests,* 2d ed. (St. Paul, Minn.: West Publishing Co., 1966), pp. 5–12.

[49]See Cribbet, *Principles of the Law of Real Property,* p. 43; Moynihan, *Law of Real Property,* p. 36; and Simes, *Handbook of the Law,* pp. 30–32.

[50]At common law, it was necessary for the grantor to actually enter the premises in order to terminate the granted estate. Today, the grantor may bring an action to re-

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party will once more have the whole bundle of sticks and own the meadow in fee simple absolute. Care should be taken to use the proper language to tie the string to the bundle. The typical words used are "on condition that," "upon the express condition," "provided that," "but if," and similar expressions. The pulling of string may be predicated on any event, including the failure of the grantee to make or refrain from a designated use, so long as it is not against public policy.[51] The conservation of natural areas is surely a legitimate purpose for private restrictions.[52]

The power of termination is not the only future interest that can be retained by the grantor. He can also convey a bundle known as a fee simple subject to a special limitation and retain a stick on a string known as a possibility of reverter. In this instance, A would convey the meadow to B and his heirs so long as the meadow remains undeveloped. Should the meadow be developed, B automatically loses his bundle (known also as a defeasible fee simple) and A, who now has the whole bundle of sticks, is restored to full fee-simple ownership. This retained stick automatically retrieves the bundle, giving rise to full fee-simple ownership once the meadow is developed. As with the power of termination, the proper language should be used in tying the string of the possibility of reverter. The terms "so long as," "during," or "until" are preferred, followed by an express provision for automatic termination of the grantee's bundle in the event of breach. As with the power of termination, the possibility of reverter may be predicated on the same event,[53] including the failure to conserve natural areas. Although these two future interests have different characteristics,[54] particularly regarding their creation and the severity of their forfeiture, they both enable the grantor to convey scenic land while retaining a significant ability to compel the transferee to maintain it in its natural state.

The use of the power of termination and the possibility of reverter is complicated by questions of alienability and heritability. Once

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cover the land without first making an entry, although in some jurisdictions notice of his election to terminate may be required. See Moynihan, *Law of Real Property,* p. 36, note 1.

[51] Lewis M. Simes and Allan F. Smith, *The Law of Future Interests,* 2d ed. (St. Paul, Minn: West Publishing Co., 1956), p. 274, § 244.

[52] See, for example, *Carpender* v. *New Brunswick,* 39 A.2d 40, 135 N.J. Eq. 397 (1944).

[53] Simes and Smith, *Law of Future Interests,* p. 337, § 285.

[54] It has been forcefully argued, however, that functionally the two property interests are largely indistinguishable. See Allison Dunham, "Possibility of Reverter and Powers of Termination: Fraternal or Identical Twins," *University of Chicago Law Review* 20 (1953): 215.

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they are created, may they be sold or inherited? The results differ depending on the future interest used. Powers of termination may not usually be sold but they may be inherited. By contrast, both are possible with possibilities of reverter.[55] In addition, in some states these property rights may expire if not used within a certain number of years. That is, in order to avoid burdening land with obsolete restrictions, the string may not be pulled. To the extent that these limits apply, perpetual private planning may be frustrated.

We have considered the preservation of a meadow by means of the conveyance of fee-simple ownership qualified by the grantor's holding a future estate that allowed him to use the threat of forfeiture to compel the meadow's preservation. A similar result could be achieved by means of a very different property right, the easement.[56] Returning to the meadow example, we can divide up the bundle of sticks, removing an easement. This time, however, we do not set up a queue. Instead, we determine how different parties may coexist in using the meadow in the present. The meadow is burdened by the easement, and the possessor of the meadow must defer to the rights of the easement holder who is entitled to a limited use or enjoyment of the land. The virtue of the easement is that it carves out precise property rights that can be exercised simultaneously. There is no need for a queue or the pulling of strings, because our aim is present multiple use.

What type of easement would be best suited for the preservation of natural areas? In the context of environmental conservation, the traditional distinctions between affirmative and negative easements and those appurtenant and in gross are critical. For example, ownership of an affirmative easement entitles the holder to go onto the burdened land and do acts that, in the absence of the easement, he would be unable to do. One example might be the granting of a right-of-way that entitles the owner of the easement to drive across the meadow. By contrast, the owner of a negative easement can compel the owner of the burdened land to refrain from doing acts that, were it not for the easement, he would be privileged to do. The holder of the easement might seek only to preserve the natural appearance of the land and would not want to do anything on the land itself. The prevention of development is thus best accomplished by a negative easement.

[55] Simes and Smith, *Law of Future Interests*, pp. 179, § 1862; 204, § 1903; 177, § 1860; 204, § 1903.

[56] See Cribbet, *Principles of the Law of Real Property*, pp. 335–46.

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The second distinction between easements appurtenant and those in gross is important in terms of future enforceability. If the holder of the easement owns other land and the easement benefits him in the use or enjoyment of that land, then the easement is appurtenant to it.[57] For example, if the owner of the negative easement governing the meadow were entitled to prevent development in order to benefit his land, Whiteacre, at the top of a nearby hill, the easement is appurtenant to that land. Whiteacre is usually called the "dominant tenement," and the appurtenant easement is attached to it so that whenever Whiteacre is sold, the easement over the meadow goes with it as an incident of ownership. The owner of Whiteacre is the "dominant tenant," and the meadow, being burdened by the easement, is the "servient tenement." On the other hand, the easement might not benefit the owner in the ownership of any other land. Such personal easements are referred to as "in gross." An example would be if the owner of the easement were entitled to prevent development in the meadow as a matter of personal right but not in order to benefit a parcel such as Whiteacre.

Assume that the meadow is burdened by a negative easement. What will happen to the meadow in the future? If the easement benefits Whiteacre at the top of the hill, it will pass with Whiteacre when it is transferred. Similarly, if the meadow is transferred, the burden of the easement preventing development will pass with it as an incident of ownership. What will happen in the future if the meadow is burdened by a negative easement in gross? On the burden site, the general rule is that the burden follows the meadow. Therefore, if the meadow were transferred to another owner, that person would still be bound to observe the negative prohibition of development. Problems would arise on the benefit side, however, if the owner of the in-gross easement attempted to transfer the easement itself. Unlike the appurtenant easement, the in-gross easement is personal to its owner and attaches to no particular parcel of land. Should the in-gross easement be transferred to another, it may be extinguished.[58] True, the owner of the in-gross easement may want to preserve the meadow just as much as the owner of the land at the top of the hill with his appurtenant easement, but, nonetheless, differing rules have often evolved.

One possible solution to the problem of the nontransferable easement in gross would be to originally convey the in-gross easement

[57] Ibid., pp. 341–42.
[58] Ibid.

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to a permanent conservation organization.[59] If its permanent legal existence were assured, then the group could perpetually prohibit development of the meadow without having to acquire any benefited parcel of land. Thus the same result would be obtained, not by having any land nearby that would always carry the appurtenant easement with it, but rather by ensuring that the easement in gross was never transferred to another owner. This strategy would work only if one could ensure that the conservation organization were never dissolved or reorganized into a new legal entity. Should such a dissolution or reorganization occur, then the easement in gross would likely be extinguished.

How might a negative easement burdening the meadow best be created? Both appurtenant and in-gross easements can be expressly created either by direct grant (conveying one stick) or by reservation (conveying the bundle and keeping one stick). In a direct grant, the easement is conveyed directly to the new owner in the same manner as any other stick from the bundle.[60] Thus, if the owner of the meadow conveyed a negative easement to the owner of the land at the top of the hill, it would, by virtue of its benefiting Whiteacre, be appurtenant. Similarly, if the owner of the meadow conveyed a negative easement to a conservation organization that owned no land benefited by the easement, it would be in gross. By contrast to creation by direct conveyance, the owner of a parcel of land may create an easement by reservation by conveying the whole bunch of sticks of the burdened meadow and retaining one stick from the bunch, which is a negative easement over it. The transferee of the meadow thus receives less than a fee simple absolute because the conveyance did not include that one stick carrying the privilege of developing the land. If the former owner of the meadow who retained the negative easement also owned Whiteacre at the top of the hill and intended to benefit that parcel of land by precluding development in the meadow, then the reserved negative easement is appurtenant. Likewise, if the former owner of the meadow owned no other land to be benefited by the retained easement, then it would be personal and in gross. Although there are various methods available for the creation of conservation easements, one should always keep in mind the importance of the legal consequences of appurtenancy.

[59]For a discussion of the creation of conservation trusts, see Allison Dunham, *Preservation of Open Space Areas: A Study of the Non-Governmental Role* (Chicago: Welfare Council of Metropolitan Chicago, 1966), pp. 33-49.

[60]Cribbet, *Principles of the Law of Real Property*, p. 337.

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Promises Regarding the Use of Land

Two methods of private planning are grounded in the contractual side of property law. Instead of conveying bundles of sticks, you make a promise about the use of the land. The first and older type of promise is that of the real covenant at law.[61] Burdened by complex requirements for enforceability, real covenants proved nearly impossible to use for private planning. The second type of promise, the equitable servitude,[62] arose in the courts of equity in the nineteenth century, where promises regarding the use of land were made enforceable because parties subject to them had actual or constructive notice of the restrictions.[63]

In this century the use of equitable servitudes is widespread, and a restrictive covenant inserted in a deed could be used to preserve land in its natural state. For example, A, owning the meadow and nearby Whiteacre, could convey one of them to B and also exact a promise from B not to develop his parcel of land. The effect of B's promise is the same as that of a negative easement, only this time instead of keeping a stick, A has the benefit of B's promise. Of course, the promises could be tailored to the specific needs of the land in question.

When you make promises to keep land in its natural state, it is important that the person to whom the promise is made own some adjacent land that is benefited by the promise. Promises are regarded as properly appurtenant to specific land and enforceable by the land's owner. If A conveys the meadow to B and exacts a promise from B to preserve it in order to benefit Whiteacre, A will be able to enforce B's promise. On the other hand, if A owns only the meadow and conveys it to B, A will retain no land benefited by the promise made to him by B to preserve the meadow. Recalling our earlier discussion, note that if A had kept a future estate (stick on a string) instead of B's promise, he could use the threat of forfeiture to compel the meadow's preservation even while owning no benefited land.

Promises regarding the use of land may not be enforceable in perpetuity for a variety of reasons, most of which focus on the disutility of obsolete restrictions.[64] In some states, statutes spell out

[61] Charles E. Clark, *Real Covenants and Other Interests Which "Run With Land,"* 2d ed. (Chicago: Callaghan, 1947), pp. 92–143; William B. Stoebuck, "Running Covenants: An Analytical Primer," *Washington Law Review* 52 (1977): 861, 865–67.

[62] Clark, *Real Covenants,* pp. 170–86; Stoebuck, "Running Covenants," pp. 887–919.

[63] Cribbet, *Principles of the Law of Real Property,* p. 356.

[64] Ibid., pp. 358–61.

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the applicable time limits. In others, judge-made common-law principles govern the termination of covenants, reflecting a special concern for changing conditions that render it impossible to secure the benefits of the promise. Because of the prohibitively high transaction costs of negotiating with owners of scattered parcels of land, the use of the restrictive covenant is most feasible either in preserving a single parcel of land as a park for the benefit of nearby land or in maintaining the park-like environmental amenities of parcels subdivided from a single, initial tract of land.[65] In either case, nearby land is benefited, and the transaction costs should be low enough to facilitate private planning. Once again, however, one must keep in mind the problem of enforcement of environmental covenants that, like easements, might be personal to the covenantee and not appurtenant to any land.

In light of these complex requirements, it is of great interest that eight states have recently enacted statutes eliminating these traditional distinctions that have, at times, so impeded private planning for environmental purposes.[66] These statutes frequently dispense with many of the formalities necessary for the creation of less-than-fee interests in land for conservation purposes.[67] Usually the conservation restriction may be stated in the form of a restriction, easement, covenant, or condition in any deed, will, or other instrument. Most important, these statutes provide that conservation restrictions are not unenforceable for lack of privity of estate or because the benefits of the restriction are not appurtenant to any particular parcel of land or on account of the benefit's being assignable or assigned. In addition, where transaction costs are high, these statutes, by making conservation restrictions enforceable by injunction, make it more likely that areas will remain in their natural state than would be the case if money damages were the only remedy. With an injunction available, the prospective violator is com-

[65] Posner, *Economic Analysis of Law*, p. 50.

[66] Conn. Gen. Stat. Ann. §§ 47-42a, -42b to -42c (1978); Fla. Stat. Ann. § 704.06 (West Supp. 1980); Ga. Code Ann. §§ 85-1407(c), -1408 to -1410 (1978 & Supp. 1979); Ill. Ann. Stat. ch. 30, §§ 401–406 (Smith-Hurd Supp. 1980-1981); Md. Real. Prop. Code Ann. § 2-118 (1974 & Supp. 1979); Mass. Ann. Laws ch. 184, §§ 31-33 (1977 Michie/Law. Co-op & Supp. 1980); N.H. Rev. Stat. Ann. §§ 47:45(I), 46-47 (Supp. 1979); N.C. Gen. Stat. §§ 121-34 to -42 (Supp. 1979).

[67] Several states authorize "preservation restrictions" extending the same dispensation to less-than-fee interests in land created for the preservation of historic buildings and areas. To the extent that some of these statutes extend their benefits to the preservation of open space natural areas, they will enhance the potential for privatization of park areas.

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pelled to negotiate with every right holder and perhaps face the problem of holdouts.[68]

Regrettably, individuals are not authorized to use these statutes.[69] Conservation restrictions may usually be acquired only by a charitable corporation or trust whose purposes include the conservation of land and water areas or by any unit of local or state government. To the extent that private groups can avail themselves of the benefits of the statutes, private planning will be enhanced. In addition, under most of these statutes, private, for-profit corporations are not allowed to avail themselves of the simplified conveyancing rules governing conservation restrictions. In 1979 North Carolina went further and authorized any private corporation or business entity with conservation purposes to hold conservation agreements.[70] This service could be offered to consumers for a fee. If conservationists were willing to pay for the services of such a firm, then entrepreneurs might provide a private corporate alternative to the political vagaries of public parks and zoning boards. The conservation firm could purchase conservation restrictions acting on behalf of its customers, some of whom might not own any property appurtenant to the restricted parcel, but who nonetheless would favor conservation. Like any business firm, the conservation firm would reduce the transaction costs of private planning, costs that might be high among scattered parcels of land.[71]

Tort Law and Privatization

Assuming no reformulation of the law of torts (which governs redress for harms to persons or their property), a privatized park system with access rationed by price would bring no great change in the obligations owed by the owners or occupants of the parkland. Liability in tort for accidental injuries by owners or occupiers of land to the users of that land has traditionally depended on whether the user is classified as a trespasser, licensee, or invitee.[72] Pursuant to a theory of an implied representation of reasonable care,[73] users of municipal, state, and federal parks have been classified as invi-

[68] Posner, *Economic Analysis of Law*, pp. 50–51.

[69] Individuals can, of course, continue to plan privately through the use of the traditional methods with all of their complex requirements.

[70] N.C. Gen. Stat. § 121-35(2) (Supp. 1979).

[71] Posner, *Economic Analysis of Law*, pp. 289–90.

[72] Clarence Morris and C. Robert Morris, Jr., *Morris on Torts*, 2d ed. (Mineola, N.Y.: The Foundation Press, 1980), pp. 132–40; and W. Prosser, *Handbook of the Law of Torts*, 4th ed. (St. Paul, Minn.: West Publishing Co., 1971), pp. 376–98.

[73] Prosser, *Handbook of the Law of Torts*, pp. 388–89.

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tees.[74] Accordingly, they stand on a higher footing than licensees, and the landowner has a duty to protect them against dangers known to him or discoverable by him with reasonable care.

With the abolition of governmental ownership and the establishment of access rationed by price, users of privately owned parks would, as business visitors,[75] continue to be classified as invitees. With the payment of a fee, the economic benefit to the landowner is clear, and the cases would undoubtedly reach the same result, perhaps on the older theory of economic benefit,[76] as that achieved under the theory of an implied representation of reasonable care. The incentive structure created by tort law for the landowner to exercise care would be the same under both a public and private regime, although the landowner would change.

Not all private recreation need be allocated by price. Private landowners are not compelled to charge a fee to grant access to their property for recreational purposes. Indeed many choose not to, and much recreation takes place within the independent sector with no state involvement.[77] It has been suggested by one careful student of private governance that tax incentives and liability safeguards should be granted to individuals who allow their privately owned land to be used for public recreation.[78] In part this suggestion has been met; in recent years most states have enacted recreation statutes that deny to the gratuitous user of the land his customary status as an invitee.[79] Because the landowner has no

[74] Regarding municipal parks, see *Caldwell* v. *Village of Island Park*, 304 N.Y. 268, 107 N.E.2d 441 (1952); regarding state parks, see *LeRoux* v. *State*, 307 N.Y. 397, 121 N.E.2d 386 (1954), and *Surmanek* v. *State*, 24 Misc. 2d 102, 202 N.Y.S.2d 756 (1960); regarding federal parks, see *Adams* v. *United States*, 239 F. Supp. 503 (E.D. Okla. 1965), and *Smith* v. *United States*, 117 F. Supp. 525 (N.D. Cal. 1953).

[75] Morris and Morris, *Morris on Torts*, p. 133.

[76] Prosser, *Handbook of the Law of Torts*, pp. 386–87.

[77] Property owners in North Carolina, for example, often gratuitously grant permission (in law, a revocable license) to dove hunters to use their land during the dove-hunting season. The supply of doves and land is so plentiful that as a result of freely available substitutes, the price demanded for access is zero. On the other hand, the supply of Canadian geese is relatively small. Thus on the eastern shore of Maryland farmers will open their fields for a price, often as much as $100 per day.

[78] Richard C. Cornuelle and Robert H. Finch, *The New Conservative Liberal Manifesto*, (San Diego: Viewpoint Books, 1968), p. 74.

[79] Ala. Code tit. 35, §§ 35-15-1 to -5 (1975); Ark. Stat. Ann. §§ 50-1101 to -1107 (1971); Cal. Civ. Code § 846 (West Supp. 1980); Colo. Rev. Stat. §§ 33-41-101 to -106 (1973 & Supp. 1979); Conn. Gen. Stat. Ann. §§ 52-557f to -557i (West Supp. 1980); Del. Code Ann. tit. 7, §§ 5901–5907 (1974); Fla. Stat. Ann. § 375.251 (West 1975 & Supp. 1979); Ga. Code Ann. §§ 105-403 to -409 (1968); Idaho Code § 36-1604 (1977); Ill. Ann. Stat.

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duty of care to keep the premises safe or warn of danger, he has less incentive to bar entry to his property because the cost of the precautions necessary to preclude a finding of negligence will be lower.

There are two major exceptions to this dispensation. The landowner typically loses his exemption if he willfully or maliciously fails to warn of a danger or if he charges a fee for admission to the property. The second exception is important should the governmental parks be auctioned off and sold to entrepreneurs who wish to charge entry fees. Unlike the gratuitous host, owners of private parks for profit would not be protected by these statutes, and their customers would be owed the duty accorded to invitees.

Privatization and the Criminal Law

The privatization of public parks would have both substantive and procedural consequences for the criminal law. With the sale of the public parks,[80] any applicable federal jurisdiction would end, and state statutes would determine the content of the criminal law applicable to the newly private land.

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ch. 70, §§ 31-37 (Smith-Hurd Supp. 1979); Ind. Code Ann. § 14-2-6-3 (Burns 1973); Iowa Code Ann. §§ 111c.1-.7 (West Supp. 1979-1980); Kan. Stat. §§ 58-3201 to -3207 (1976); Ky. Rev. Stat. § 150.645 (1971); La. Rev. Stat. Ann. § 9:2795 (West Supp. 1980); Me. Rev. Stat. tit. 12, §§ 3001-3005 (1974); ibid., tit. 14, § 8103(2)(F)(2) (Supp. Pamph. 1965-1979); Md. Nat. Res. Code Ann. §§ 5-1101 to -1108 (1974); Mass. Gen. Laws Ann. ch. 21, § 17C (West 1973); Mich. Comp. Laws Ann. § 300.201 (Supp. 1979); Minn. Stat. Ann. §§ 87.01-.03 (West 1977); Mont. Rev. Codes Ann. §§ 70-16-301 to -302 (1979); Neb. Rev. Stat. 37-1001 to -1008 (1974); Nev. Rev. Stat. § 41.510 (1973); N.H. Rev. Stat. Ann. § 212:34 (Supp. 1977); N.J. Stat. Ann. §§ 2A:42A-2 to -5, :53A-7 to -9 (West Supp. 1979-1980); N.M. Stat. Ann. § 16-3-9 (1978); N.Y. Gen. Oblig. Law § 9-103 (McKinney 1978 & Supp. 1979-1980); N.C. Gen. Stat. §§ 113-120.5-.6 (Supp. 1979); N.D. Cent. Code §§ 53-08-01 to -06 (1974); Ohio Rev. Code Ann. §§ 1533.18-.181 (Anderson 1979); Okla. Stat. Ann. tit. 2, § 1301-315 (West 1973); Or. Rev. Stat. §§ 105.655-.680 (1977); Pa. Stat. Ann. tit. 68, §§ 477-1 to -8 (Purdon Supp. 1979-1980); R.I. Gen. Laws §§ 32-6-1 to -7 (Supp. 1979); S.C. Code §§ 27-3-10- to -70 (1976); S.D. Codified Laws Ann. § 20-9-5 (1975); Tenn. Code Ann. §§ 11-10-101 to -103 (1980); ibid., §§ 51-801 to -805 (1977); Tex. Rev. Civ. Stat. Ann. art. 1b (Vernon 1979); Vt. Stat. Ann. tit. 10, § 5212 (1973); tit. 13, §§ 3769-3770 (1974); Va. Code § 10-150.18 (Supp. 1979); ibid., § 29-13-.2 (1979); Wash. Rev. Code Ann. §§ 4.24.200- .210 (Supp. 1980); W. Va. Code §§ 19-25-1 to -6 (1977); ibid., § 20-7A-6 (1978); Wis. Stat. Ann. § 29.68 (West 1973 & Supp. 1979); Wyo. Stat. §§ 34-19-101 to -106 (1977).

[80] At present, criminal jurisdiction in the public parks varies a great deal. In local parks, state law governs; while in the national parks, the determination of jurisdiction is more complex. See "Comment: The Criminal Law Enforcement Authority of Park Rangers in Proprietary Jurisdiction National Parks: Where Is It?" *California Western Law Review* 13 (1976): 126, 128-30.

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Once the parks were privatized there would be no reason why law enforcement should remain a public monopoly.[81] To the extent that each private park was a discrete entity, private patrolling would be quite feasible because one would avoid the free-rider problem[82] that might otherwise prevent the purchase of private protection services. The detection and apprehension of criminals could be confined to the premises of the subscriber, and the conferral of benefits could easily be minimized.[83] Municipal parks present perhaps the easiest case for privatization of police services because of their clearly defined boundaries. These islands of greenery in an urban setting could easily be patrolled without conferring substantial benefits on neighboring property owners. Violations that occurred on the property of nonsubscribers could be ignored. More remote parks in nonurban areas present a different set of problems. The borders of rural parks might be less well defined, resulting in uncertainties of jurisdiction and difficulties of patrolling. Nonetheless, the acreage of the more remote private parks would be self-contained enough to avoid major spillover of benefits.

Private law enforcement in the parks would simplify and enhance the protection of park visitors. Within each park, one firm would probably be responsible for law enforcement, and visitors would not be confused by the overlapping duties of various public law-enforcement agencies, as is the case today in some public parks. Private law-enforcement firms serving the parks could utilize brand names and lower the costs of search to the consumer of protection services in a manner reminiscent of franchised food outlets and department stores. Within each park the efficiencies of the firm would lower the costs of law enforcement as internal decision-making disciplined by the market remedied the inefficiencies and lack of coordination prevalent among public agencies.

[81] Because of its focus on law and private park management, this discussion is limited to private patrolling of property and apprehension of criminals in the field and assumes a continued public monopoly of prosecution and trial, although privatization in the latter area is also feasible. For a discussion of the private enforcement of the criminal law at the trial stage, see Posner, *Economic Analysis of Law,* pp. 461–78. See also Poole, *Cutting Back City Hall,* pp. 50–61. Because of the delays resulting from crowded dockets, the use of private judges in civil litigation is increasing. See "California Is Allowing Its Wealthy Litigants to Hire Private Jurists," *Wall Street Journal,* August 6, 1980, p. 1.

[82] See White, "Privatization," p. 193. For a discussion of the external benefits produced by patrolling, see Gordon Tullock, *Private Wants, Public Means* (New York: Basic Books, 1970), pp. 212–13.

[83] Tullock, *Private Wants,* p. 211.

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The Parks, Public Choice, and the Future

The impediments to privatization of the public parks are not legal. Indeed, the legal system could adapt quite easily to a privatized system of parks and recreation. In the best tradition of private ordering, if there were a need, imaginative conveyancing lawyers could devise a way to meet it. Just as the private lawyers made possible the mortgage, long-term lease, and myriad uses of the law of trusts,[84] so could they be the architects of the private parks. Their creative drafting could renew the private law and build consensual institutions consistent with economic efficiency and individual freedom.

On the other hand, the impediments to privatization are primarily political. At a time when entrepreneurial coalitions have succeeded in politicizing economic choice by a resort to the public law,[85] the legal possibilities of privatizing the public parks are inseparable from the profound questions of public choice. These questions are crucial ones for lawyers. Because they are often the harbingers of rent seeking in a politicized society,[86] their services all too frequently amount to social waste. Most important, however, by encouraging the rent seekers' breakdown of restraint, the new public lawyers are degrading and transforming the law from an instrument of spontaneous private agreement into one of public coercion. It is no accident that the era of politicization has seen the decline of the evolving common law and the rise of transfer legislation. If we can solve the riddle of democratic governance, then we can save not only the parks but also the law and the lawyers.

[84] Karl N. Llewellyn, *The Bramble Bush* (New York: Oceana Publishers, 1960), pp. 146–47.

[85] See, for example, Meltzer, *Why Government Grows;* Thomas Sowell, *Knowledge and Decisions* (New York: Basic Books, 1980); and A. Walters, *The Politicization of Economic Decisions* (Los Angeles: International Institute for Economic Research, 1976).

[86] This is not to deny that real economic growth may contribute to an increased demand for legal services.

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TOWARD A FREE MARKET IN FOREST RESOURCES

Charles R. Batten

Conflict over the use and management of America's forest lands and resources intensified during the 1970s, with debates over the use of the undeveloped lands inventoried by the Forest Service, the division of lands in Alaska, the establishment and expansion of certain national parks acquired from private landowners, and the regulation of forest practices on private lands. These conflicts date from Colonial times, when British attempts to reserve all the white pine trees in New England for the king's navy were among the grievances that led to the American Revolution.[1] Those who wage the battle for conservation argue that resources must be conserved by government decree. Their position is based largely on a distrust of private ownership and of the free market as an allocator of natural resources. Their opponents point to the growing demands for wood products, water, livestock forage, and minerals, and seek to develop them.

Yet in all the debates the basic underlying issue is seldom discussed. The fundamental questions that shape the issue and are really being debated are:

1. What kind of socioeconomic system are we going to have in this country?
2. Who is going to control the management and allocation of our most basic natural resources?
3. Will natural resources be controlled by the public decisions of governmental agencies?

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The author is a free-lance writer and a former Director of Communications of the California Forest Protective Association.

[1] Joseph J. Malone, *Pine Trees and Politics—The Naval Stores and Forest Policy in Colonial New England, 1691–1775* (Seattle: University of Washington Press, 1964).

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4. Will they be controlled through the voluntary marketplace by the decisions of individual members of society?

Since the entire economy rests on our natural resources and their conversion into consumer goods, the resolution of these questions will determine the ultimate form of our economic system.

Conservation in Action

The word "conservation" as applied to the forests and other natural resources carries with it the connotation of legislation or regulation to require certain practices or uses of those resources. Usually, the uses and practices that prevail are determined less by scientific knowledge and experience in their management than by the personal preferences of those who are able to wield the greatest political power. Conservation, by its very nature, is conflict.

The national forests, born in conflict, continue to be surrounded by it. Gifford Pinchot, the first chief of the Forest Service, developed a philosophy of multiple use, seeking to provide "the greatest good for the greatest number." That policy seemed to work well until after World War II. Until then anyone could visit the forest without stumbling over other users. But the postwar era brought rapid population expansion, increased mobility, and greater affluence, all of which increased the demands on the nation's forests and their related resources.

At a time of increasing public participation promoted by politicians, governmental agencies, and special-interest groups, society has turned to political rather than economic solutions. According to popular wisdom, we must have a system of national forests and, beyond that, a system of controls of practices on privately owned forest lands in order to ensure that existing forests and soil productivity will not be destroyed.

Consequently I have defined "conservation" as the use and allocation of natural resources as controlled, regulated, or directed by government. Such use may be under government ownership or government regulation of privately owned resources. It is seldom wise use.

Underlying it is a basic failure to understand the market economy and how it works to provide continuing supplies of wood products, public recreation, wilderness, wildlife habitat, and other goods and wants.

The Forest

Nearly one-third of the land area of the United States is forested, and nearly 40 percent of that forest land is owned by the United

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States government (see tables 1 and 2). According to the Forest Service, about two-thirds of the forest lands are commercial, defined as those capable of growing commercial wood crops and potentially available for that purpose. Included are productive private lands and those public lands that are not reserved for special uses exclusive of timber harvesting.

Though the Forest Service and other public agencies own more than one-half of the standing sawtimber, they are producing less than one-third of the harvest (see table 3). Edward P. Cliff, then chief of the Forest Service, told a Senate committee in 1969 that "any sustained increase in log harvest in the West must come from public lands." More intensive forest practices could increase the annual allowable harvest of the national forests by two-thirds over the long term.[2] In 1973 Cliff reported that long-term allowable harvests could be increased by 6 billion board feet annually.[3] In 1970 growth on the national forests was only 39 percent of their productive capacity (much less than for any other class of ownership), and an independent panel appointed by the president concluded that "it is clear that national forests today are growing relatively little wood, whether the standard of comparison is the forest industry forests as currently managed or the national forest potential productivity."[4]

Nearly 4.4 billion board feet of sawtimber in the national forests dies from natural causes each year, more than one-third of the amount that is harvested from them.[5] Using that timber before it dies would increase both the present and future productivity of the national forests. But the public owners have rejected economic criteria for the management of their lands. Neither the costs of the land nor the costs of the timber inventories are considered, and this creates a tremendous hidden cost to taxpayers and consumers. Using 1974 data and allowing for the value of recreation and other benefits provided at no cost to the user, Dr. Marion Clawson estimated that the national forests earned less than one-half percent on their investment. With a 5 percent carrying charge, the national

[2] *Problems in Lumber Pricing and Production,* Hearings before the Subcommittee on Housing and Urban Affairs of the Committee on Banking and Currency, U.S. Senate, 91st Congress, March 1969 (Washington, D.C.: Government Printing Office, 1969), pp. 584–608.

[3] Edward P. Cliff, *Timber: The Renewable Material* (Washington, D.C.: Government Printing Office, 1973), pp. 6–27.

[4] *Report of the President's Advisory Panel on Timber and the Environment* (Washington, D.C.: Government Printing Office, April 1973), pp. 36, 78.

[5] The foregoing acreage and ownership figures are from *RPA, An Assessment of the Forest and Range Situation in the United States,* Review Draft, U.S. Department of Agriculture, Forest Service, 1979.

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TABLE 1

FOREST LAND OWNERSHIP IN THE UNITED STATES

	Acres (thousands)	Percentage of Total
Federal		
Forest Service	141,863.7	19.2
Bureau of Land Management	114,163.4	15.4
Other federal	29,130.4	3.8
Total	285,157.5	38.5
Nonfederal	454,985.2	61.5
All ownership	740,142.7	100.0

SOURCE: Department of Agriculture, Forest Service, *An Assessment of the Forest and Range Land Situation in the United States* (Washington, D.C.: Department of Agriculture, 1979), p. 29.

NOTE: Forest land is defined by the Forest Service as land that is at least 10 percent occupied by trees of any size, or formerly having such tree cover, and is not currently developed for nonforest use.

TABLE 2

COMMERCIAL FOREST LAND OWNERSHIP IN THE UNITED STATES

	Acres (thousands)	Percentage of Total
Public		
Federal	99,654.8	20.4
State	23,641.8	4.8
Local government	7,215.9	1.5
Indian	6,089.2	1.3
Total	136,601.7	28.0
Private		
Forest industry	67,975.6	13.9
Farm	116,784.5	24.0
Other private	166,364.1	34.1
Total	351,124.2	72.1
All ownership	487,725.9	100.0

SOURCE: Department of Agriculture, Forest Service, *An Assessment of the Forest and Range Land Situation in the United States* (Washington, D.C.: Department of Agriculture, 1979), p. 306.

NOTE: Commercial forest land is defined by the Forest Service as land capable of growing at least 20 cubic feet per acre per year of industrial wood and not withdrawn from timber utilization.

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TABLE 3

PROPORTION OF COMMERCIAL FOREST LAND AND SAWTIMBER INDUSTRY, GROWTH AND HARVEST, BY OWNERSHIP

Ownership	Land Owned (%)	Sawtimber Owned (%)	Sawtimber Growth (%)	Sawtimber Harvested (%)
National forest	18.2	41.1	17.3	18.9
Other public	9.8	11.1	9.2	8.8
Forest industry	13.9	15.1	19.7	32.2
Farm and other private	58.1	32.7	53.8	40.0
All owners	100.0	100.0	100.0	99.9

SOURCES: Department of Agriculture, Forest Service, *An Assessment of the Forest and Range Land Situation in the United States* (Washington, D.C.: Department of Agriculture, 1979), pp. 306, 311, 314; and Council on Environmental Quality, *Environmental Quality—1979: The Tenth Annual Report of the Council on Environmental Quality* (Washington, D.C.: Government Printing Office, 1979), p. 710.

forests actually lost $2 billion annually, or $9 for every person in the country. Clawson commented that "capital which seems to be free is an irresistible temptation to its wasteful use."[6]

When the United States was formed, the western holdings of the individual states were ceded to Congress, which adopted a policy of selling the lands to support the new government and to pay off the debts incurred by the Revolution. Though there were earlier attempts to reserve forest lands, the basic policy until 1891 was one of land disposal. Then an act of Congress authorized the president to reserve public forest lands in any state or territory, whether of commercial value or not. The Weeks Act of 1911 directed the Forest Service to purchase cutover lands for the protection of soil and watersheds, particularly in the eastern states. Thus, the reversal of national policy from that of disposal of federally owned lands to one of acquisition from private owners was complete.

Federal purchase of privately owned lands received new emphasis when the Land and Water Conservation Fund Act became effective at the beginning of 1965. The act authorized a special fund, to be divided among the states and the federal government, to acquire and develop outdoor recreation resources. The federal share can be used only to acquire more lands or to offset capital costs that are allocated to public recreation or to fish and wildlife

[6] Marion Clawson, "The National Forests," *Science* 191 (February 20, 1976): 762–67.

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values on federal water projects. The federal share cannot be used for development or management of existing areas. Several large parks have been established since 1965, the most notable being the Redwood and Voyageurs National Parks and the Big Thicket National Preserve, all on lands taken primarily from timber companies.

The General Accounting Office (GAO) has been critical of the three major land acquisition agencies – the National Park Service, the Forest Service, and the Fish and Wildlife Service – for their "general practice of acquiring as much private land as possible regardless of need, alternative land control methods, and impacts on private landowners." According to the GAO, 42 percent of the land area of the United States is publicly owned, and some 60 million acres have been acquired from private owners.

During fiscal years 1973 to 1977, the three federal agencies acquired 2.2 million acres at a cost of $606 million. An additional $10 billion has already been authorized for land acquisition and development through the Land and Water Conservation Fund over the next eleven years ($4 billion for federal acquisition and $6 billion for state and local governments for acquisition and development). The GAO recommended that other protection alternatives, such as easements, zoning, and federal land use controls, should be used rather than outright purchase.[7]

The GAO's recommendations follow a trend that began as early as the 1960s when, because of the high cost of lands they coveted, proponents of government acquisition began exploring other ways to acquire "public interest" resources. Later a major study of the rights of private property and the constitutional limits to public control of those rights was commissioned by the Council on Environmental Quality with partial financing from the Ford Foundation. The authors concluded that "there is little historical basis for the idea that a regulation of the use of land can constitute a taking of the land."[8] This study is only one of many reports and misconceptions that are used to justify stronger regulation of the so-called public interest in private forest lands.

In 1976 the secretary of the California Resources Agency told the Mount Shasta Chapter of the Society of American Foresters:

> I think that it is an important thing for us all to recognize that this

[7]General Accounting Office, *The Federal Drive to Acquire Private Lands Should Be Reassessed,* CED-80-14 (Washington, D.C.: Government Printing Office, 1980).

[8]Fred Bosselman, David Callies, and John Banta, *The Taking Issue: An Analysis of the Constitutional Limits of Land Use Control* (Washington, D.C.: Government Printing Office, 1973), p. 328.

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> land, which stretches from the Pacific to the Atlantic, from Mexico to Canada, belongs to all the people of the United States – not just to the people who are living now, . . . but also to the future.[9]

The following December, in an environmental manifesto for forest lands, Charles Warren, then chairman of the California Assembly's Land Use, Resources, and Planning Committee, explained that California's Forest Practice Act and Environmental Quality Act merely defined more clearly some of the public interests in timber and timber land.

> What the legislature has done in the Forest Practice Act, Coastal Act, the Yield Tax Bill, and other land use measures is not the taking of private property. On the contrary, I am convinced that these actions only serve to establish a clearer distinction of what is public and what is private. The legislature has defined, through such bills, those portions of privately held property which are really *public property*.[10]

For a number of years this attitude has prevailed in California. A timber owner must pay a registered professional forester to prepare a Timber-Harvesting Plan that must be approved by the director of the State Department of Forestry before harvesting can begin. Before the plan is approved, it is reviewed by a team consisting of representatives of the Department of Forestry, the regional Water Quality Control Board, the Fish and Game Department, the Coastal Commission (if the area is in the coastal zone), and sometimes other agencies, such as the Department of Parks and Recreation and the National Park Service.

It doesn't always take an infraction of timber-harvesting regulations to cause disapproval of a plan. The use for misleading publicity of preharvest photographs taken by a member of a review team led one landowner to refuse to allow him to carry a camera on a field inspection of a timber-harvesting plan. Because of that refusal, the director of the Department of Forestry denied approval of the plan, and the state Board of Forestry upheld the denial on appeal, even though the board has no rule concerning cameras.[11]

At least in California, there is no such thing as the private ownership of forest land. As Warren said, the state has redefined property rights to make those resources public property. The paper deed

[9]Mrs. Claire Dedrick, Secretary for Resources, State of California, in a speech before the Mt. Shasta Chapter, Society of American Foresters, Yreka, California, 1976.

[10]Charles Warren, "Public Views, Ethics and Professionalism," a speech before the Northern California Section, Society of American Foresters, Sacramento, December 4, 1976.

[11]California State Board of Forestry, May 7, 1980; appeal on THP 1-78-911M, AM-4.

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held by the owner carries with it little more than the right to pay taxes on the property it describes.[12] My discussion of the public ownership of forests and their complementary resources therefore also applies to the regulation of privately owned forest land. The only difference is in the method and degree of control.

Some Principles of Ownership

Why the prevalent view that forests must be socialized by government ownership and control? Is this view consistent with the basic principles that govern human action?

By the mid-nineteenth century, the warning of approaching timber famine was frequently heard. In 1874 George Perkins Marsh wrote:

> There are parts of Asia Minor, of Northern Africa, of Greece, and even of Alpine Europe, where the operation of causes set in action by man has brought the face of the earth to a desolation almost as complete as that of the moon. . . . The earth is fast becoming an unfit home for its noblest inhabitant.[13]

Marsh deplored that so much forest land in the United States had already been transferred to private ownership. He believed that the same kind of destruction was occurring here as had occurred in the Middle East. He misinterpreted the history of the Mediterranean region and therefore failed to understand the causes of the apparent overuse of resources during his own time.

The closest parallel in the United States to the degradation of the Mediterranean region was on the western public rangelands, where the law did not permit the settler to acquire an economic land unit. Competition among the graziers for the open range, coupled with some action by the federal government, contributed to the development of the dust bowl of the 1930s.[14] Like the open range of the American West, the Cedars of Lebanon and the so-called devastated areas described by Marsh were unowned; they were commons available to all. In his classic essay "The Tragedy of the Commons," Garrett Hardin gives an excellent description of

[12]For an explanation of how this was achieved by exploiting the conflicting provisions of two state laws, see Charles R. Batten, "The Second Battle of the Redwoods," *Reason* 11 (October 1979):18–23.

[13]George Perkins Marsh, *The Earth—As Modified by Human Action* (a new edition of *Man and Nature* (New York, 1894) published by Scholarly Press, St. Clair Shores, Mich.), p. 43.

[14]Richard Goff and Robert H. McCaffree, *Century in the Saddle* (Denver, Colo.: Colorado Cattlemen's Centennial Commission, 1967), pp. 119–22 and chap. 8.

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what happens when herdsmen use common lands without restrictions:

> Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.[15]

In primitive societies it was a simple matter when the land wore out to move into a new area and continue the same destructive practices. "It was only when a country was more densely settled and unoccupied first-class land was no longer available for appropriation, that people began to consider such predatory methods wasteful," wrote Ludwig von Mises. "At that time they consolidated the institution of private property in land. They started with arable land and then, step by step, included pastures, forests, and fisheries."[16]

They were beginning to discover the principles of ownership and human behavior. As Susan Love Brown, with others, wrote,

> Principles are not legislated or invented – they are discovered. For centuries men were ignorant of the laws of physics, but they were subject to them nonetheless. It was only when principles were discovered that the great advances in the physical sciences could take place. So it is with human action. To the extent that the principles of human nature have been ignored or rejected, men have suffered poverty, stagnation, and political tyranny.[17]

Written law originated not as legislation but as an effort to record the customs already observed by society. Bruno Leoni writes, "Both the Romans and the English shared the idea that the law is something to be *discovered* more than to be *enacted* and that nobody is so powerful in his society as to be in a position to identify his own will with the law of the land."[18] Leoni, an internationally known lecturer and political scientist, describes how the tendency to equate law exclusively with legislation and to neglect custom and spontaneous actions among individuals is leading to the destruction of individual freedom.

[15]Garrett Hardin, "The Tragedy of the Commons," in *The Environmental Handbook, Prepared for the First National Environmental Teach-In,* ed. Garrett DeBell (New York: Ballantine Books, 1970), pp. 31-50.

[16]Ludwig von Mises, *Human Action,* 3d rev. ed. (Chicago: Henry Regnery Co., 1966), p. 656.

[17]Susan Love Brown et al., *The Incredible Bread Machine* (San Diego: World Research, Inc., 1974), p. 127.

[18]Bruno Leoni, *Freedom and the Law* (Los Angeles: Nash Publishing, 1972), p. 10.

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According to Gottfried Dietze, in 1606 Jean Bodin wrote that

> property is such a fundamental institution that the degree of civilization can be measured by the severity of punishment for infringements upon property, such as theft.... A prince, no matter how great his authority...could not justify infringements upon private property. The claim that the king exercises *dominium* over all things within his *imperium* is based upon a misinterpretation of Roman law, for "every subject hath the true proprietie of his own things, and may therefore dispose at his pleasure." The king, no matter how great his temporal powers may be, is still bound by the law of nature and the laws of the realm, and cannot arbitrarily infringe upon property rights.[19]

The early advocates of the democratic form of government considered the protection of property rights to be its very foundation. Dietze noted that the English jurist Sir William Blackstone wrote that property could be expanded by regulatory measures, but not restricted.

> The English government, whenever regulating private property, was bound by natural law. English law itself was part of the law of nature. The latter was "coeval with mankind, and dictated by God himself,... binding over all the globe, in all countries, and at all times. No human laws are of any validity, if contrary to this; and such of them as are valid derive all their force, and all their authority, mediately or immediately, from this original."[20]

Henry George, who favored the public ownership of land and the "single tax" on its use, believed that any man is entitled to own all the products of his labor. But natural resources, which are God-given, must be owned by society.[21] A tree that a farmer has planted and nurtured to maturity is his to do with as he wishes; but a tree in a Nature-grown forest, or the land on which it stands, is not for the farmer to claim. Both tree and land are gifts of Nature and therefore belong to all society.

This view ignores the nature of mankind and fails to reflect the true origin of a resource. A tree or a clay or mineral deposit is not a resource until some person with a little insight discovers a way to convert it to some beneficial use. Then it becomes a resource. Society did not discover and convert the tree or clay into useful

[19]Gottfried Dietze, *In Defense of Property* (Baltimore: Johns Hopkins University Press, 1971), p. 20 (originally published in 1963 by Henry Regnery Co.). Dietze quotes from *Six Bookes of the Commonweale* (1606).

[20]Ibid., p. 27. Dietze quotes from Blackstone's *Commentaries* (12th ed., 1794).

[21]Henry George, *Progress and Poverty* (New York: Robert Schalkenbach Foundation, 1975); originally published by George himself in 1879.

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goods; it was the individual who had the curiosity to experiment and the nimble fingers to develop new skills. His art and the material cannot be separated, and they are rightfully his. In a free market he is rewarded for his craft, not penalized or regulated in the use of the raw materials.

If all God-given resources are owned by society, then so are the unique mental and physical characteristics that enable the craftsman to develop his skills. If society claims his natural talents, it must also claim his acquired skills, and the craftsman becomes its slave.[22]

We know that the only legitimate and peaceful way for consumers to acquire food or tools is through voluntary exchange. Thievery, fraud, and slavery are considered immoral. Cooperation among neighbors, not robbery or conquest, provides for greater productivity, a higher standard of living, and a generally more desirable society.

There is no basic difference between armed robbery and the taking of certain rights of ownership by a legislative redefinition. Ownership of property consists of a bundle of rights to various uses of the property. When a person has a right, we simply mean that it would be immoral for another person, acting alone or with others, to stop him by force or threat of force from exercising that right.[23]

Ownership denotes control. When control of a forest property is taken from its owner, conflict is introduced. The owner is forced to do what he would not otherwise have done, or he is prevented from doing what he would have done.[24] He is less able to produce the goods and other benefits that consumers have shown they want by their voluntary purchases and contributions. Costs are increased, and the search for better ways of growing trees, preserving soils, or encouraging wildlife is inhibited.

If ownership rights are unstable or uncertain, an owner is less likely to spend effort and money to improve the productivity of his soil or the utilization of the wood he grows. I know of one corporate timberland owner who has a complete small-log mill on the drawing boards. The mill, if built, would make better management of

[22]For a similar view, see Murray N. Rothbard, *Man, Economy and the State: A Treatise on Economic Principles* (Los Angeles: Nash Publishing, 1970), pp. 148ff.

[23]James A. Sadowsky, "Private Property and Collective Ownership," in *Property in a Humane Economy,* ed. Samuel L. Blumenfeld (LaSalle, Ill.: Open Court, 1974), pp. 85–100.

[24]For a more lengthy discussion, see Rothbard, pp. 768ff; or his *Power and Market—Government and the Economy* (Menlo Park, Calif.: Institute for Humane Studies, Inc., 1970).

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the company's forests possible, provide for more complete utilization of its timber, and make more jobs available in an area of high unemployment. But the mill has not been built, because the owners have no assurance that they will be allowed to harvest trees from their own lands in the future. When ownership rights are uncertain, planning horizons are shortened to the nearest possible term because the owner cannot be reasonably sure of receiving future benefits from his efforts.[25] The current trend toward more complete socialization of the forests is contrary to the economic and moral principles by which the members of a free society acquire the goods and services they need and want. It is counterproductive and lowers the standard of living. The long-predicted timber famine may well come about. If it does, it will have been caused by turning what should be professional forestry and economic decisions into political decisions.

Management Objectives

Since there are many reasons for owning forest land, there may be several management objectives. Because some of those objectives conflict, one primary or dominant use must be chosen and clearly defined for any single tract of land.

In the absence of overriding regulations, an individual landowner, a hunting club, the Sierra Club, or a timber company can select a primary objective for the management of the land and proceed toward it. In public ownership a clearly defined objective is impossible to identify, since each of the "owners" has a different view. There can be no unity of purpose when such a collective decision is made.

We are often told that each citizen owns a little less than one acre of national forest land. Suppose that an ardent Sierra Club member and I were shown one acre of old growth timber and were told that it belonged to us jointly, that neither of us could sell out, and that we must decide how it would be managed. I would immediately start looking it over to determine how it should be harvested, what logging method to use, and where to locate the roads. The Sierra Club member would want to leave the acre in its pristine condition, adding only a few light trails and perhaps a rustic campground. He would do everything in his power to stop my logging operation. We would be locked in continual combat, each trying to

[25]The effects of uncertain or insecure ownership are discussed more fully by S. V. Ciriacy-Wantrup, *Resource Conservation: Economics and Policies,* 3d ed. (Berkeley, Calif.: Div. of Agricultural Sciences, University of California, 1968), chaps. 10, 11.

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protect his own interests. If, by some miracle of diplomacy, we were able to work out a compromise, neither of us would ever be totally happy with the results. Each would claim that society would receive greater and more important benefits if the land had been used his way.

In effect, since we cannot agree on how to manage our commonly owned acre, we have turned it over to the Forest Service. It is the federal government who determines the purposes for which it is to be managed. The Forest Service listens politely to us both, along with all the allies each side can muster. The battles become emotional, and the person or organization that tries to use logic or factual information is frequently lost in the uproar.

No matter what the Forest Service decides, it is castigated by the losers. Court cases often result and progress soon grinds to a halt. With special-interest groups trying to dictate their views, each claiming to represent the public, capable forest officers are unable to make professional decisions. Instead, major decisions are made in the political arena and are based on political expediency rather than on well-defined management objectives. Users are pitted against one another in a social climate wherein each feels that he must exert as much political pressure as he can in order to get the most favorable decision from the agency.

In every political battle there are losers and winners. This is in contrast to the free market, where every participant benefits from a voluntary exchange. If the Sierra Club member and I were allowed to bargain and one of us could sell out to the other, our conflict would be resolved. If I bought him out, he could use the proceeds and purchase another acre that would have a better view, perhaps a better campsite, and might better suit his purposes in all respects. If he bought me out, I could search for another stand with easier access or more timber volume. Then each of us would be able to pursue his own interests, and, perhaps most important, we would remain friends. When he needed poles to build a primitive shelter, he could buy them from me; and when I am ready for a wilderness vacation away from my logging roads and clear-cuts, he could provide it.

Land use decisions, whether they result in timber harvests or in wilderness preservation, are basic economic decisions, and they are therefore properly made only in the voluntary marketplace. True public demand cannot be determined as though the public were a single-minded entity. It can only be determined by the voluntary actions of all individuals within a society, as they seek to fulfill their needs and wants.

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Marketing decisions made in the political arena cannot respond to the changing demands of a dynamic society. Policies made last year are not necessarily appropriate this year, but bureaucratic red tape makes timely responses impossible.

One major problem the national forests face is that of even-flow management of timber-producing lands. Even-flow ignores current economic conditions and calls for the harvesting of the same amount of timber whether the market is good or bad. Such a policy is simply incorrect economic reasoning, according to forest economist Barney Dowdle.[26] It tends to intensify the violent fluctuations of an already volatile market.

If more timber is not made available during times of high demand, the elevated prices typical of those periods are forced even higher. Since the federal government owns more than one-half of the standing sawtimber supply, it exerts a great influence on both supply and prices of lumber and plywood products. Yet the forest managers have rejected the price system, which in Dowdle's view is the most important "timber supply problem in the United States today."[27]

During periods of high demand the private owner generally increases his timber harvests. This increase tends to keep the price from going higher. In 1973 I made a preliminary study showing that the wholesale price index and the stumpage prices paid for western species, originating primarily on the national forests, fluctuated wildly when compared with species originating in the South, where private ownership is predominant.

Under private ownership, the market, by means of the price system, becomes both the stimulus for improved forest management and the means of allocating limited resources among those end uses that are in greatest demand.

It is said that profit seekers must take the short-term view and have no concern for future production or long-term productivity. This cannot be. A responsible private owner of forest resources must maintain the maximum possible present value of his property at all times if he is to earn maximum returns. He must balance today's production with future productivity, which requires a long-term view. The property must be kept in productive condition, and the owner doesn't do that by destroying his resources.

[26] Barney Dowdle, "Economic Criteria and the Timber Supply," a speech before the Western Timber Association, San Francisco, Calif., March 5, 1976.

[27] Barney Dowdle, "Perspectives on the Timber Supply Situation," *Washington Public Policy Notes* (Seattle: University of Washington, Institute of Governmental Research), vol. 4, no. 2 (Spring 1976).

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We have learned that land and resources in private ownership will not be destroyed but will be preserved simply because it is in the owners' best interest to preserve them. The real "tragedy of the commons" is that we have failed to apply the lessons of our past experience.

Toward a Free Market

It is popular to argue that society's needs for natural resources can be met only by government ownership or control. This is a remarkable argument, even after one considers that those who embrace it are equating society's needs with their own wants or their own interpretations of demand. Few of them advocate the government ownership of farms for the production of food and shoe leather.

The owner of income-producing property must meet the demands of society, or he will fail in his pursuits. If the forest owner can serve the demands of some segment of society, whether it be sportsmen, bird watchers, backpackers, wilderness lovers, stockmen, timbermen, campers, or kayakers, then he is performing a valuable service and society will reward him for it.

If our forest resources are ever to provide the greatest good for consumers, we must eliminate the sources of conflict over their management. We must recognize that the cause of the conflict lies not in differences in personal tastes but in the prevailing popular view that property rights in land and resources are a subject for legislation. We must recognize the immorality of redefining property rights away from private ownership. Instead, let us redefine them so that all interests in forest land and related resources are protected as private property. The marketplace, not government, is the proper arena in which to eliminate conflict.

The redefinition includes, of course, the transfer of the publicly owned forests into private ownership. Probably the best way would be to sell the lands to the highest bidders and use the returns to pay off the national debt and to reduce taxes. Under this plan society's needs and wants would be furnished more efficiently and more equitably than they are today. Each property would be acquired by people who could put it to a use suited both to its character and to society's demands.

The Sierra Club, for example, could do an outstanding job if it owned Yellowstone National Park, Rocky Mountain National Park, or Yosemite. The Sierra Club and other conservation organizations have a singleness of purpose. Each could determine a dominant objective for managing its own property. The members' esprit de corps and enthusiasm would lead them to volunteer their expertise

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and their labors, allowing both members and nonmembers to benefit from and support their efforts.

Such a change will not be easily made. Newton's third law of motion, which says that for every action there is an equal and opposite reaction, applies equally well in the social and political worlds. Any proposal to transfer the public lands into private ownership will be resisted by those who derive some private good from the public ownership of lands and from those who remain unconvinced that private owners are better stewards of the land.

It is beyond the scope of this paper to attempt to overcome all the objections and problems that might be encountered, but I will touch briefly on two of them.

First, some persons who agree with the position presented here may not be willing to support it because they do not believe it is politically feasible. But if we are afraid to speak out for some future goal, dare we ever expect to achieve it? Certainly we are not talking about something that will happen next year. Over a longer term who is to say what will be politically feasible? Public opinion often changes very rapidly. We are now in a period of rapid change, and a goal of a free market in forest resources may be nearer now than at any time since the turn of the century.

A second concern, felt by some environmentalists who might otherwise lean favorably toward this proposal, is that the timber companies might be able to outbid them on all the desirable forest land. There would undoubtedly be heavy bidding among the timber companies for high value timber-growing lands, especially where their lands are intermingled with the public forests in the three west coast states, in northern Idaho, and in western Montana. But they would probably exhaust their available capital before they could buy it all. The costs of capital would limit the opportunity for those who would grow timber strictly for monetary profit, especially on the less productive sites in the Rocky Mountain region. Those are the lands that would be of higher value for recreation, water production, range, and wildlife.

Some timber companies prefer not to own any timberland and rely on the open market for their raw materials. In the South, for example, the industry owns only 18 percent of the commercial forest land and purchases most of its wood from farmers and other landowners.

When a free market in forest resources is achieved, it will be the result of serious efforts to learn how human demands are met and how conflicts are resolved in a free and civilized society. Any legislative change will be in response to a higher level of under-

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standing among those who make up our society, a rediscovery of the natural law that governs society and its use of resources to fulfill its physical and aesthetic demands.

If the natural laws of human behavior and economics seem to conflict with the natural laws of physics and biology, it is because we do not understand them. They must be in harmony, since they all play their part in governing earth's great life-support system. As Susan Love Brown wrote,

> Because the basic principles of freedom are consistent with man's nature, they work. And because the basic principles of collectivism (statism) are not consistent with man's nature, they do not work, as not only history proves, but the state of the world today confirms.[28]

[28]Brown et al., *Incredible Bread Machine*, p. 127.

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THE MYTH OF NEUTRAL TAXATION

Murray N. Rothbard

A neutral mode of taxation is conceivable that would not divert the operation of the market from the lines in which it would develop in the absence of any taxation.

Ludwig von Mises, HUMAN ACTION, 1949

Economists have long believed that government's tax and expenditure policy either is, or can readily be made to be, neutral to the market. Free-market economists have advocated such neutrality of government, and even economists favoring redistributive actions by government have believed that the service activities and the redistributive activities of government can easily be distinguished, at least in concept. The purpose of this paper is to examine the nature and implications of fiscally neutral government; the paper argues that all government activities necessarily divert incomes, resources, and assets from the market, and therefore that the quest for a neutral tax or expenditure policy is an impossible one and the concept a myth.

1. Structure of the Free Market: Consumers and Incomes

To evaluate the idea of a neutral government, we must first define what neutrality to the market may be. Any firm or institution is neutral to the market when it functions as *part* of the market. That is, both General Motors and Mom and Pop's Candy Store are

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The author is Professor of Economics at the Polytechnic Institute of New York, Brooklyn 11201.

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part of the market, and insofar as their activities remain within the market, they are neutral to it.[1]

We may analyze market institutions according to the following categories: (a) what and how much they produce, and (b) how much and from where the institution receives monetary funds. For every institution produces goods or services and receives money.

There are two types of market institutions. One is the business firm. The firm is guided by its expectations of monetary income from customers in payment for its products. The firm receives funds from two sources: (b_1) customer expenditures, and (b_2) entrepreneurial investments. Entrepreneurial investments are monies invested in the firm to purchase or hire factors of production to make goods and services to be sold to customers. The investments are savings spent in anticipation of greater returns from selling products to customers. Although the conspicuous resource and production decisions in the market are made by capitalist-entrepreneurs – by the owners of the firm and its capital assets – these decisions are made in accordance with their expectations of monetary income from customers. In short, businessmen are guided by the quest for monetary profits and the wish to avoid monetary losses, and their forecasting and anticipations must turn out to be good enough to reap profits from their production decisions. The intake of investment funds into the firm, then, is subordinate to the expected profit to be made from sales to customers.

Business firms and the structure of capital assets in the economy, as Austrian School economists have shown, are *not* a homogeneous lump: Production is a structure of stages, a latticework that moves from the most "roundabout" processes of production – the stages of production most remote from the consumers – down to nearer processes, and finally down to the production and sale of goods and services to the ultimate consumers.[2] The ham sandwich at the local coffee shop begins with the mining of ore for tools and machines and the growing of grain to feed hogs, and continues in stage after stage down through the wholesale and retail stages, until it arrives in the maw of the final buyer, the consumer. Thus, for our purposes, we can short-circuit the structure and refer to the *consumer* as the basic source of the income of business firms; ultimately, it is

[1]Thus lobbying or other government-related activities by any business firm would *not* be neutral to the market.

[2]On the structure of production and capital, see, among other works, Eugen Böhm-Bawerk, *Capital and Interest,* 3 vols. (South Holland, Ill.: Libertarian Press, 1959), and Ludwig M. Lachmann, *Capital and Its Structure* (Kansas City: Sheed, Andrews and McMeel, 1978).

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consumer demand that provides profits or losses to business firms and either vindicates or not prior production decisions by investors.

Investments that bring money in to the firm in anticipation of consumer demand, (b_2), consist of two parts. The basic investment (b_{2a}) is investment by the owner or owners of the firm in the form of personal savings, partnerships, or investment in corporate stock. Auxiliary investments (b_{2b}), are loans to the owners of the firm by other capitalists, either in the form of short-term credit or long-term debentures. The willingness of the firm's owners to pay a fixed-interest return to lenders is, of course, a function of their anticipated profit in selling the product to the consumers. Willingness to pay interest will always be less than or equal to the anticipated profit rate; and in the long-run general-equilibrium world of changeless certainty – a world that has never and can never come into existence – the rate of return would be equal throughout the market economy. In that world, the rate of profit in every firm would be equal to the rate of interest on loans.[3]

For market firms, therefore, there is no mystery about the determination of their production decisions and income. The former are determined by firms' anticipation of consumer demand, and the latter by the reality of that demand. Hence, firms receive their income, in the final analysis, from serving consumers. The more efficiently and ably the firms anticipate and serve consumer demand, the greater their profits; the less ably, the less their profits and the more they suffer losses.

Finally, the owners of the factors of production – land, labor, and capital goods – receive their income *in advance of production* from the investor-owners of the firm. The more ably and productively a factor or factors are believed to serve consumer demand, the greater the demand for those factors by the owners, and the higher their income. Since capital goods themselves form part of the structure of production, ultimately factor incomes consist of the income from the exertion of labor energy (wages, salaries), the use of land (land rents), and the transfer of money (a present good) in exchange for anticipated future income (a future good) – that will yield interest

[3]Both would be determined by the social rate of time preference as determined on the market, the premium of present as compared to future goods – an agio which would be the resultant of all the time-preference schedules by individuals on the market, in much the same way as consumer demand is the embodiment of the marginal-utility schedules of individuals. See Murray N. Rothbard, *Man, Economy and State*, 2d ed. (Los Angeles: Nash Publishing Co., 1970), vol. 1, chap. 6; Frank A. Fetter, *Capital, Interest and Rent: Essays in the Theory of Distribution* (Kansas City: Sheed, Andrews and McMeel, 1977), part 2.

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(or long-run profit) for time preference, and entrepreneurial profits or losses. All these factor incomes then, are tied to the efficient service of anticipated consumer demand.[4]

Incomes to factors and entrepreneurs on the market, therefore, are tied inextricably to the effective satisfaction of consumer demand, a satisfaction that depends on the successful forecasting of the market conditions that will exist when and after the goods or services are produced. Income to the firm and to factors from consumers is linked inextricably to the satisfaction the consumers derive. In a deep sense, therefore, income to producers on the market reflects benefits to consumers.

The crucial point is that when consumers spend, they benefit, because the expenditures are voluntary. The consumers buy product X because they decide that, for whatever reason, it would benefit them to buy that product rather than use the money on some other product or save or add to their cash balances. They give up money for product X because they expect to prefer that product to whatever they could have done with the money elsewhere; their preference reflects a judgment of relative benefit from that, as compared to another, purchase. In my own terms, spending choices by consumers demonstrate their preference for one, as compared to another, way of using their money.[5]

And that is not all. The profit-and-loss tests of the market, the rewarding of effective producers and forecasters and the punishing of ineffective ones, ensures that the overall ability at any time of entrepreneurs to forecast and satisfy consumer demands will be high. Good forecasters will be rewarded with higher profits and incomes; poor forecasters will suffer losses and finally leave the business. So that the market *tendency* is toward a high level of fit between anticipation and reality, and for a minimum of erroneous investment. Producer income, therefore, reflects consumer benefit even more closely than we might at first realize.[6]

[4]That is, each unit of each factor will tend to receive its discounted marginal revenue product, its marginal value productivity discounted by the rate of interest. So each unit of land and labor will tend to receive its DMRP, and the capitalist (or lender) will receive the discount (in the form of interest or long-run profit). Only in the never-never land of general equilibrium would each factor always receive its DMRP; in the real world, the positive or negative differences would reflect entrepreneurial profits or losses. See Rothbard, *Man, Economy and State,* chap. 7.

[5]On the concept and implications of "demonstrated preference," see Murray N. Rothbard, *Toward a Reconstruction of Utility and Welfare Economics* (New York: Center for Libertarian Studies, 1977), especially pp. 2-7, 26-30.

[6]This, however, is a long way from saying, with conventional neoclassical economists, that general equilibrium and perfect knowledge are facts of reality, or, with

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The second type of market institution – after the business firm – is the voluntary nonprofit membership organization: the bridge club, lodge, ideological organization, or charitable agency. Here, too, income and benefit are cognate. Income is no longer divided between investors and consumers. All income is obtained from members, either in the form of regular dues or systematic or occasional donations. The purpose of the organization is not to earn a monetary profit, but to pursue various purposes desired by the income-paying members. In a sense, then, the members are the "consumers," except that they consume the services of the organization not by purchasing a product but by helping the organization pursue its goals. The member-donors are at the same time the consumers and the investors, the consumers *and* the makers of the production decisions.[7] The organization will employ as much of its resources as the member-consumer-donors desire to contribute to the pursuit of their goals.

Membership organizations, while clearly part of the market, are necessarily limited in their scope, for they do not follow the division of labor necessary for most market production. In virtually all other cases of production, the producers and the consumers are not one and the same: The producers of steel bars do not, Heaven forfend, use up those selfsame bars in their own consumption. They sell the bars for money and exchange the money for other goods that they would like to consume. In the case of membership organizations, however, the member-investors are the consumers of the service.

Even where the explicit goals of the organization are to help nondonors, this rule – that the consumers guiding production decisions are the donors – still applies. Suppose, for example, the organization is a charity giving alms to the poor. In a sense, the purpose is to benefit the poor, but the actual consumers here, the guides to production decisions, are the donors, not the recipients of charity. The charity serves the purposes of the donors, and *these* purposes are in

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the rational-expectations economists, that the market always perfectly forecasts the future. If this were true, there would be no room for entrepreneurship at all, and the most dynamic and vital aspect of the market economy would go unremarked and unexplained. Also, the business cycle caused by government distortion of market credit and interest rates would go unexplained. See Gerald P. O'Driscoll, Jr., "Rational Expectations, Politics, and Stagflation," in *Time, Uncertainty, and Disequilibrium: Exploration of Austrian Themes,* ed. M. J. Rizzo (Lexington, Mass.: Lexington Books, 1979), pp. 153–76.

[7] For convenience, "members" and "donors" shall be used interchangeably throughout, although in many cases donors are technically not "members" of the organization.

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turn to help the poor. But it is the *donors* who are consuming, the donors who are demonstrating their preference for sacrificing a lesser benefit (the use of their money elsewhere) for a greater (giving money to the charity to help the poor). It is the donors whose production decisions guide the actions of the charity.

In this case, presumably, the donors themselves will be guided, in their turn, by how effective the organization is in ministering to the poor. But the ways of judging this effectiveness lack the precision of monetary purchase, or profit and loss. They depend on subjective interpretation by the donors, an interpretation that is necessarily subject to a great deal of error. Donors, in the same way, are the consumers regardless of the purpose of the nonprofit organization, whether it is chess playing, medical research, or ideological agitation. In all these cases, precise profit-and-loss tests of effectiveness are lacking; in all these cases, too, donors voluntarily pursue their activity, preferring it to other uses of their resources.[8]

Nonprofit organizations also purchase and hire factors of production. To a large extent, these organizations compete with business firms for factors; to that extent, they must pay the factors at least the discounted marginal product they can earn elsewhere. To some extent, however, the factors may be specific to these organizations; to that extent their marginal product incorporates their service to the donor-consumers, that is, the extent to which they pursue the same goal as the sources of income. Thus, in both the profit-making and the nonprofit sectors, in their different forms, production decisions are guided by service to the consumers. The main difference is that in the case of business firms, the consumers are separate from the producers, and (we hope) recoup producers' investments by buying the products of the firm; while in nonprofit organizations, the consumers are the donor-investors.

We have been describing two polar cases: the business firm, and the nonprofit organization. Probably most real-world institutions on the market fall into one of these categories. In some cases, however, an organization can partake of both modes. Let us consider two cases. First, a charitable organization, instead of, or in addition to, giving away alms, may sell some products to the poor at a low, subsidized price. In this case, while the donors provide the overall thrust and guidance, part of the feedback gained by the firm is willingness to buy goods by the recipients. In some sense, the recipi-

[8]The lack of precise guidance in nonprofit organizations is not a *criticism* of their existence; this lack is simply part of the nature of the case, and it is taken into account by the donors when they make their "investment" decisions in the organization.

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ents of alms provide a guide to their interest in the organization. There are now two sets of consumers: the donors, and the charity recipients, each of whom demonstrates their preference for this organization in contrast to other uses for their money.[9] But the overall purpose of the organization is not to make a profit, but rather to serve the values and goals of the donors, and so the donors must be considered the regnant consumers in this situation.

Another case is a profit-making business firm where the owner or owners decide to accept a lesser monetary profit on behalf of some other goals of the owners: e.g., because a certain line of product is considered immoral by the owners or because the owner wishes to hire incompetent relatives in order to keep peace in the family. Here once again, these are two sets of consumers – the buyers of the product, and the producers or owners themselves. Because of his own values as a "consumer," the owner decides to forgo monetary profit because of his own moral principles or because he holds keeping peace in the family high on his value scale. In either case, the owner is forgoing some monetary profit in order to achieve *psychic* profit. Which motive will dominate depends on the facts of each particular case. Since the market is generally characterized by a division of labor between producers and consumers, however, the general tendency will be for monetary profit, or service to non-owning consumers, to dominate the decisions of business firms.[10]

It is a basic fact that all voluntary actions are undertaken because actors expect to benefit from them. When two persons make a voluntary exchange of goods or services, they do so because each expects to benefit from the exchange. When A trades commodity X for B's commodity Y, A is demonstrating a preference – an expected net benefit – for Y over X, while B is demonstrating the opposite, a

[9]In a trivial sense, of course, being willing to accept a free gift by a charity is *also* a demonstration of preference by the recipient, but only in the trivial sense that he prefers more of a good to less. The recipient is not sacrificing any good or service in exchange.

[10]It is curious that statist critics of the market invariably denounce "production for (monetary) profit" as greedy and selfish, and instead uphold "production for use" as unselfish and altruistic. On the contrary, producers can only make monetary profits to the extent that they serve *other* consumers. Logically, altruists should deeply admire the successful pursuit of monetary gain on the market.

It is also curious that many writers believe that the maximum-(monetary)-profit assumption for business motivation may have been true for personally owned nineteenth-century firms, but that it no longer holds for the modern corporation. On the contrary, it is precisely the modern corporation where "impersonality" of investment and producer decision will tend to dominate, since the personal wishes of single owners are no longer nearly as important. Unprofitable nepotism, for example, is far more likely to reign in the mom and pop store than in the large corporation.

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preference for X over Y. The free market is a vast latticework of two-person (or two-group) exchanges, an array of mutually beneficial exchanges up and down and across the structure of production.[11]

2. Robbery and the Market

Having dealt with this idyll of harmonious and mutually beneficial exchanges, let us now introduce a discordant note. A thief now appears, making his living by robbing and coercively preying on others: The robber obtains his income by presenting the victim with a choice: your money or your life (or, at least, your health)—and the victim then yields his assets. Or, to be more precise, the robber presents the victim with a choice between paying immediately or waiting until the robber injures him.[12] In this situation both parties do not benefit; instead, the robber benefits precisely *at the expense of* the victim. Instead of the consumer's paying, guiding, and being benefited by the producer's activity, the robber is benefiting from the victim's payment. The robber benefits to the extent that the victim pays and loses. Instead of helping expand the amount and degree of production in society, the robber is parasitically draining off that production. Whereas an expanded market encourages increases in production and supply, theft discourages production and contracts the market.

It should be clear that the robber is not producing any goods and services at all. In contrast to consumers who purchase goods and services, or who contribute voluntarily to a nonprofit organization, no one is voluntarily purchasing from or contributing to our criminals at all. If they were, the criminals would not be criminal. In fact, what distinguishes a criminal group is that its income, in contrast to that of all other organizations, is extracted by the use of violence, against the wishes or consent of the victims. The criminals, then, are "producing" nothing, except their own income at the expense of others.

It has been maintained that the payments by the victims are "really" voluntary because the victim decides to transfer his funds under penalty of violence by the robber. This kind of sophistry, however, destroys the original, as well as the common-sense,

[11] In a voluntary gift transaction, both parties also benefit; the donee benefits from the receipt of the gift and demonstrates this benefit by accepting it; the donor benefits psychically from the fact of having made the gift, and demonstrates that benefit by making it.

[12] Burglars, as distinct from robbers, do not confront their victim directly and so present him with no choice; but they employ physical coercion by seizing his property without his consent.

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meaning of the term "coercion" and renders *all* actions whatever "voluntary." But if there is no such thing as coercion and all conceivable actions are voluntary, then the distinctive meaning of both terms is destroyed. In this paper, we are defining "voluntary" and "coercion" in a common-sense way: that is, "voluntary" are all actions not taken under the threat of coercion; and "coercion" is the use of violence or threat of violence to compel actions of others. Robbery at gunpoint, then, is "coercion"; the universal need to work and produce is not. In a trivial sense, the victim agrees to be victimized rather than lose his life; but surely, to call such a choice or decision "voluntary" is a corruption of ordinary language. In contrast to truly voluntary decisions, where each person is better off than he was before the prospect of exchange came into view, the robbery victim is simply struggling to cut his losses, for, in any case, he is worse off because of the entry of the robber onto the scene than he was before.

Just as the claim that the victim's payment to the thief is "voluntary" is patently sophistical, so is it absurd to claim that the robber is "producing" some service to the victim or anyone else. The fact that the victim paid him revenue proves no demonstrated preference or value; it proves only that the victim prefers the imposition to being shot.

The robber may well spin elaborate arguments for his productivity and for his alleged benefit to the victim. He may claim that by extracting money he is providing the victim a defense from *other* robbers. In attempting to achieve and maintain his monopoly of loot, he may very well act against other robbers trying to muscle in on his territory. But this "service" scarcely demonstrates his productivity to the victims. Only if the victims pay the robber voluntarily can any case be made for a nexus of payment and benefit. Since payments are now coercive instead of voluntary, since the consumer has now become the victim, all arguments offered by the criminal and his apologists about why the victim should have been eager to pay the criminal voluntarily are in vain, for the stark and overriding fact is that these payments are compulsory.

The robber takes the funds extracted from the victims and spends them for his own consumption purposes. The total revenue collected by theft we may call tribute; the expenditures of the robbers, apart from the small sums spent on burglars' tools, weapons, planning, etc., are consumption expenses by the robbers. In this way, just as income and assets are diverted from the productive sector to the robbers, so the robbers are able to use that money (in their purchasing) to extract productive resources from the market.

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We conclude, then, that the activities of thieves are most emphatically *not* neutral to the market. In fact, the robbers divert income and resources from the market by the use of coercive violence, and thereby skew and distort production, income, and resources from what they would have been in the absence of coercion. If, on the contrary, we adhere to the view that theft is voluntary and criminals productive, then criminal activities, too, would be neutral to the market, in which case the entire problem of neutrality would disappear by semantic legerdemain, and *everything* by definition would be neutral to the market because the rubric of the market would encompass all conceivable activities of man. In that case, nothing could be called "intervention" into the market. By labeling aggressive violence as "coercion" and as an interference into the market, we avoid this kind of absurd trap, and we cleave closely to the common-sense view of such concepts as "coercion," "voluntary," "market," and "intervention."

3. Government as Robber

We are now in a position to analyze government and its relationship to the market. Economists have generally depicted the government as a voluntary social institution providing important services to the public. The modern "public choice" theorists have perhaps gone furthest with this approach. Government is considered akin to a business firm, supplying its services to the consumer-voters, while the voters in turn pay voluntarily for these services. All in all, government is treated by conventional economics as a part of the market, and therefore, as in the case of a business firm or a membership organization, either totally or in part neutral to the market.

It is true that if taxation were voluntary and the government akin to a business firm, the government would be neutral to the market. We contend in this paper, however, that the model of government is akin, not to the business firm, but to the criminal organization, and indeed that the State is the organization of robbery systematized and writ large. The State is the only legal institution in society that acquires its revenue by the use of coercion, by using enough violence and threat of violence on its victims to ensure their paying the desired tribute. The State benefits itself at the expense of its robbed victims. The State is, therefore, a centralized, regularized organization of theft. Its payments extracted by coercion are called "taxation" instead of tribute, but their nature is the same. The German sociologist Franz Oppenheimer saw this clearly when he wrote that

> there are two fundamentally opposed means whereby man, re-

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> quiring sustenance, is impelled to obtain the necessary means for satisfying his desires. These are work and robbery, one's own labor and the forcible appropriation of the labor of others. . . . I propose . . . to call one's own labor and the equivalent exchange of one's own labor for the labor of others, the "economic means" for the satisfaction of needs, while the unrequited appropriation of the labor of others will be called the "political means."[13]

Oppenheimer then proceeded to identify the State as the "organization of the political means."[14] Or, as the libertarian writer Albert Jay Nock, vividly put it: "The State claims and exercises the monopoly of crime. . . . It forbids private murder, but itself organizes murder on a colossal scale. It punishes private theft, but itself lays unscrupulous hands on anything it wants, whether the property of citizen or alien."[15] Or, as Ludwig von Mises points out, this regularization establishes a systematic coercive hegemonic bond between the rulers of the State and the subject that contrasts vividly with the contractual bond of mutual benefit.

> There are two different kinds of social cooperation: cooperation by virtue of contract and coordination, and cooperation by virtue of command and subordination or hegemony. Where and as far as cooperation is based on contract, the logical relation between the cooperating parties is symmetrical. They are all parties to interpersonal exchange contracts. John has the same relation to Tom as Tom has to John. Where and as far as cooperation is based on command and subordination, there is the man who commands and there are those who obey his orders. The logical relation between these two classes of men is asymmetrical. There is a director and there are people under his care. The director alone chooses and directs; the others—the wards—are mere pawns in his actions.[16]

In this coercive, hegemonic condition, the individual must either accept the orders of the ruler or rebel. To the extent that the person submits, this choice then subjects him to the continuing hegemony of the rulers of the State. Contrasting the contractual and the hegemonic, Mises states:

> In the frame of a contractual society the individual members exchange definite quantities of goods and services of a definite quality. In choosing subjection in a hegemonic body a man neither gives nor receives anything that is definite. He integrates himself into a system in which he has to render indefinite services and

[13] Franz Oppenheimer, *The State* (New York: Vanguard Press, 1926), pp. 24–27.
[14] Ibid.
[15] Albert Jay Nock, *On Doing the Right Thing, and Other Essays* (New York: Harper & Bros., 1928), p. 145.
[16] Mises, *Human Action,* p. 196.

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> will receive what the director is willing to assign to him. He is at the mercy of the director. The director alone is free to choose. Whether the director is an individual or an organized group of individuals, a directorate, and whether the director is a selfish maniacal tyrant or a benevolent paternal despot is of no relevance for the structure of the whole system.[17]

Mises goes on to contrast the system of contractual coordination that is responsible for much of the achievements of Western civilization with the hegemonic system embodied in the State, "an apparatus of compulsion and coercion... by necessity a hegemonic organization."[18]

The idea that taxation is voluntary seems to be endemic among economists and social scientists, though hardly so among the general public.[19] But if an individual refuses to pay his assigned tax, coercion will be wielded against him, and if he resists the confiscation of his property he will be shot or jailed. Failure to pay taxes subjects one to civil and criminal penalties. There should be little need to pursue the matter beyond this, were not economists determined to deny this patently obvious fact. As Joseph Schumpeter trenchantly declared: "The theory which construes taxes on the analogy of club dues or of the purchases of, say, a doctor only proves how far removed this part of the social sciences is from scientific habits of mind."[20]

But if taxation is coercive and a system of organized theft, then any "services" that the government may supply to its subjects are beside the point, for they do not establish the government as voluntary or as part of the market any more than a criminal band's providing the "service" of defending its victims from competing bands establishes that *its* services are voluntarily paid for. These services are *not* voluntarily paid for by the taxpayers, and we therefore cannot say that the taxes measure or reflect any sort of benefit. In the case of voluntary purchase on the market, as we have seen, the consumer demonstrates by his purchase that he values the good or service he buys more than the price he pays; but in paying taxes he

[17] Ibid., p. 197.

[18] Ibid., p. 198. This is not to imply that Mises believed that the State could or should be abolished; instead, he believed that the world should be "*preponderantly* a product of contractual relations." (Italics mine.) Ibid.

[19] We speak here of "voluntary" in the nontrivial sense that distinguishes it from the "involuntary" or "coerced" payment to thieves.

[20] In the preceding sentence, Schumpeter wrote: "The state has been living on a revenue which was being produced in the private sphere for private purposes and had to be deflected from these purposes by political force." Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (New York: Harper & Bros., 1942), p. 198, 198n.

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demonstrates no such thing – only the desire not to be the recipient of further violence by the State. We have no idea how much the taxpayers would value these services, if indeed they valued them at all. For example, suppose that the government levies a tax of X dollars on A, B, C, etc., for police protection – for protection, that is, against irregular, competing looters and not against *itself*. The fact that A is forced to pay $1,000 is no indication that $1,000 in any sense gauges the value to A of police protection. It is possible that he values it very little, and would value it less if he could turn to competing defense agencies. Moreover, A may be a pacifist; so he may consider the State's police protection a net harm rather than a benefit. But one thing we do know: If these payments to government were voluntary, we can be sure that they would be substantially less than present total tax revenue. Why? Because if people were willing to pay voluntarily, then there would be no need for the apparatus of coercion so intimately wrapped up in taxation.

A second important point is that, in contrast to the market, where consumers pay for received benefits (or, in nonprofit organizations, where members pay for psychic benefits), the State, like the robber, creates a total disjunction between benefit and payment. The taxpayer pays; the benefits are received, first and foremost, by the government itself, and secondarily, by those who receive the largess of government expenditures.

But if, under coercive taxation, tax payments far exceed benefits to the victim, *and if* benefits accrue to the government itself and to the recipients of its expenditures at the expense of taxpayers, then it should be quite clear that it is impossible for taxes ever to be neutral to the market. Taxation, whatever its size or incidence, must distort market processes, *must* alter the allocation and distribution of assets, incomes, and resources.

4. The Alleged Voluntariness of Taxation

Despite the fact that government and taxation are patently coercive, economists have devoted considerable energy, in numerous ways, to maintaining the contrary. If government and taxation were truly voluntary, then taxation would be akin to a market payment, and government could be deemed a part of, and therefore neutral to, the market.

By lumping government along with private expenditures as a gauge of the output of the economy, the conventional national income statisticians are implicitly assuming that government is neutral to the market because government provides those "services" that "society" desires it to supply. Government "output" is equated

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to the salaries paid to the bureaucracy. By employing the seemingly precise method of segregating *some* government expenses as mere "transfer payments"—the taxing of Peter to pay Paul—rather than productive purchases of goods and services, the national income statisticians are in reality making an unsupportable ideological judgment. For in what sense does the hiring of bureaucrats, or the purchasing of paper clips, add to the production of the economy and therefore become somehow voluntary, while transfer payments are frankly taxing one group to subsidize another? As we shall see further below, *all* taxation necessarily involves taking from one group to subsidize another; therefore all government expenditures, taken together, constitute one giant transfer payment.

Even if one does not go that far, it is a rare person who would not concede that at least 50 percent of government expenditures are sheer waste, which would mean that they should not form part of the estimated national product at all. Despite his recognition of this fact, as well as of the shakiness of ranking government expenses along with market expenditures, Sir John Hicks finally sees no alternative. He puts it this way:

> I can see no alternative but to assume that the public services are worth to society in general at least what they cost.... One may feel considerable qualms about such an assumption—it is obvious that the government spends far too much on this, far too little on that: but if we accept the actual choices of the individual consumer as reflecting his preferences... then I do not see that we have any choice but to accept the actual choices of the government, even if they are expressed through a Nero or a Robespierre, as representing the actual wants of society....[21]

Elsewhere, Hicks explains that in constructing national product figures, "the social accountant... must work upon some convention which is independent of his individual judgment."[22] It is remarkable that Hicks can find security from the shoals of individual judgment in assuming that Nero or Robespierre embody "the actual wants of society." Can he really believe that this fictive "society" and its head of State adequately represent the preferences of individual citizens?

Collective Goods

More intellectually respectable is the contention that *insofar as* government supplies society with "collective goods" or "public

[21] John R. Hicks, "The Valuation of the Social Income," *Economica* (May 1940), cited in Alex Rubner, *Three Sacred Cows of Economics* (New York: Barnes and Noble, 1970), p. 54.

[22] Hicks to Rubner, Sept. 28, 1966. In Rubner, *Sacred Cows*, p. 54n.

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goods," it is supplying a necessary service and is in a sense voluntary and neutral to the market. Collective goods are goods that allegedly cannot be supplied on the private market because they are indivisible and therefore cannot be allocated by having individual consumers pay for their own portions of the product. No consumer can be excluded from receiving the good. Like the sun, collective goods shine on all alike, and none can be made to pay for the service. Professor Buchanan, sympathetic to idea of an "ideally neutral fiscal system," defines it as one that "uniquely aims at providing the social group with some 'optimal' or 'efficient' quantity of collective goods and services. . . ." Then, if "the fiscal system is conceived as the means through which collective goods and services are provided to members of the society without any subsidiary or supplementary social purposes," we have, says Buchanan, an "analogy with the market economy." The fiscal system is then "ideally neutral" to the market economy.[23]

In the first place, even if there were such things as collective goods, government supply would establish neither its voluntarism nor its neutrality. Even if there were no other way to supply these services, taxation to provide them is *still* compulsory. And since it is coercive, there is no standard, as there is on the market, to decide *how much* of these services to supply by taxation. And the more the government provides, the less people are allowed to spend on their own private consumption.

Furthermore, if there exists but *one* anarchist in any society, the very existence of the State coercively supplying a collective good constitutes a great psychic harm to that anarchist. The anarchist, therefore, receives not a collective service but an individual harm from the operations of the State. It follows therefore that the good or service cannot be truly collective; its "service" is separable, and distinctly negative, to the anarchists. Hence, the good can neither be truly collective (indivisible, and positive) nor can it be voluntary.[24]

[23] James M. Buchanan, *The Public Finances,* 3d ed. (Homewood, Ill.: Richard D. Irwin, Inc., 1970), pp. 62-63.

[24] After identifying the essence of government as coercion, and after carefully analyzing each type of government and "political entrepreneurship," Montemartini concludes that "there are no public, or collective needs in the strict sense of the word, as opposed to private needs. It is always real individuals who calculate the advantages of imposing on the community the production of certain specific goods." And these individuals' valuations will differ: "The calculations of economic advantage differ from one associate to another when it comes to determining the needs to be satisfied collectively." Hence, the production of "collective goods" is always coercive: "The

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No matter how "indivisible" the service, furthermore, a collective good is not quite like the sun: The more resources the government expends, the greater will be its output. These resources will have to be extracted from other potential products. Take, for example, "defense" or police protection, which is often considered to be provided as a homogeneous lump to everyone. But every good or service in the world, "collective" ones included, are provided, not in lump sum, but in marginal units. Yet strangely, economists, trained to think of marginal units everywhere else, suddenly start referring to defense as a "lump" when discussing government. In reality, however, there is a vast range of "defense" services that the government (or any other defense agency) could supply to its customers. To take two polar extremes, the government could supply one unarmed policeman for an entire country, or it could sink most of the national product into providing an armed bodyguard, replete with tank and flame throwers, for every citizen. The question that must be answered by any defense agency is not whether or not to supply defense, but *how much* defense to supply to *whom*? In the same way, the question confronting a steel company is not whether or not to produce steel, but how much steel of various grades and types to supply.

But this failure to provide rational criteria for amounts and types of collective services is an inherent flaw in any provision by government. The market's price system and profit-and-loss test tell private firms how much of what kind of steel to produce; rational criteria for satisfying consumers most efficiently are inherent in the free market. But government can have no such criteria. Since the consumers of defense do not pay for the service, since taxes do not measure the service, and since the government does not have to worry about losses that can be recouped by further taxation, there are no criteria of how much defense to provide to whom. Decisions are purely arbitrary, as well as coercive. If, on the other hand, defense were provided by private firms on the market, then these firms would, as in the rest of the market, supply efficiently the amounts and types of protection desired by particular customers. Those customers, for example, who desired and were willing to pay for round-the-clock bodyguards would do so; those who felt no

collectivization of the satisfaction of some needs always aims at a participation in the costs by economic units which would not voluntarily have so participated." Giovanni Montemartini, "The Fundamental Principles of a Pure Theory of Public Finance," in *Classics in the Theory of Public Finance*, ed. R. Musgrave and A. Peacock (New York: Macmillan Co., 1958), pp. 150–51.

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need of protection – or pacifists aghast at the very idea – would pay nothing; and there might be a large spectrum of services in between.

More specifically: Only a minority of specific individuals find themselves in actual need of police or judicial protection during any given period. If A and B are attacked, the police can spring to the aid of these specific persons. It will be objected that even if only a few persons are actually attacked at any one time, no one can determine *who* will be attacked in the future, and so everyone will want to be sure of protection in advance, thus salvaging the notion of a "collective want." But, again, there will be a spectrum of opinion among individuals. Some persons may feel pretty sure that they will not be attacked, and will therefore be willing to opt out of protection, to take their chance rather than pay a protection tax. Others will be confident of their own ability to repulse an attack, or would only patronize another, competing private defense agency. Others may fear an attack so little that the cost of paying protection will not be worth the benefit. On the free market, individuals would be free to choose any or none of these protection-insurance packages.

Even if it be conceded that not all people demand protection, it might still be argued that defense is a "collective good" because no one can be excluded from receiving its benefits. But surely if the inhabitants of a particular block refuse to pay for the police protection, the police may simply exclude that block from its patrols or other services. In the case of judicial protection, the conventional case for a collective good is even weaker. For surely a court, financed by voluntary payment (either by insurance premium or by fee-for-service), can refuse to hear the case of a nonpaying plaintiff. Even in the case of national defense, which seems to be a particularly strong example of a collective good, the pacifist or anarchist receives a harm rather than a good, and exclusion can be practiced in such ways as not rushing troops or planes to defend nonpaying areas, or at the very least not to defend them as rapidly and as diligently as areas that do pay.

Thus defense cannot be a collective good so long as only one pacifist or one anarchist exists in the society, for these persons will receive a harm rather than a benefit when they receive the "service" of coercive defense. And defense is not a collective good because its recipients *can* be excluded and separated.

Professor Kenneth Goldin is one of the very few economists to recognize that defense service is separable and not indivisible. He

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also points out that increased police service requires increased expense:

> As communities grow, and more residents must be supplied with crime defense, most communities hire more policemen; clearly an increased cost. If more policemen are not hired, then new residents can be served only by decreasing service to others: more streets can be patrolled only if there are fewer patrols at night; more properties can be checked only if each one is checked less thoroughly, and only the more urgent calls can be responded to. Each of these service changes imposes costs on residents. Either they will suffer from more crime, or they will incur the costs of purchasing other types of crime defense. Many types of crime defense are selectively available such as locks, fences, guard dogs, guards, and also alarm companies which respond if the burglar alarm is tripped. And don't overlook private police patrols, which check selected houses on selected streets, as thoroughly and as often as each customer requests, for a fee.[25]

Court services are clearly separable, and private arbitrators are indeed generally more efficient than government courts. Goldin adds:

> To service more persons generally requires more judges and courtrooms. If more facilities are not acquired, additional users will impose costs on others, in the form of longer delays for trial and/or less judicial time spent on each case. It is costless to serve additional persons only if they have no disputes. . . .

To some extent, he goes on, even government courts charge fees to users and therefore charge for benefits received, although the fees usually do not vary with the difficulty of the case. And "private arbitrators are also available, selectively, to those parties willing to pay a fee. So, although adjudication is a fundamental service in any society, it does not follow that adjudication is a public good."[26]

And even in the case of national defense, Goldin points out,

> there is certainly some variation in protection, especially among cities (regarding protection by missiles), and among Americans who either travel or have property abroad. (While the troops may be sent out to protect some Americans or their property from some foreign seizures (such as the Mayaguez), in other cases no action is taken (tuna boats).) One of the firmly embedded myths of modern public finance is that it doesn't matter if population increases: The costs of defending the U.S. from external attack will not change. But consider two points. First, the new population

[25]Kenneth D. Goldin, "Equal Access vs. Selective Access: A Critique of Public Goods Theory," *Public Choice* 29 (Spring 1977): 60.
[26]Ibid., pp. 65-66.

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> must live somewhere. If they cause an increase in the U.S. land area, then either more defenses must be provided, or there will be a decrease in the level of protection to earlier residents and either way the marginal cost of protecting additional persons is positive.... Second, even if the new population resides within the existing boundaries, they will generally increase the amount of physical and human wealth which might be coveted by an enemy. That is, foreign attack is (at least partially) an economically motivated action, and is more likely to occur if there is more capital worth coveting....[27]

Not only does total cost of national defense vary with population, but the service of protection against foreign attack can be variable. First, there once existed private armies, and such armies, serving private individuals or groups, still exist today. Goldin mentions the armies of religious groups in contemporary Lebanon, as well as a Central American army owned by Robert Vesco. These armies, as Goldin states, "yield benefits primarily to their owner."[28]

Second, even a collective State army can vary its services to individual citizens:

> A military force also protects people from theft of property and kidnapping by foreigners. Exclusion from this service is relatively easy: The military force simply makes no attempt to stop theft or kidnapping of named persons. These persons would either hire their own guards, or suffer the damages of theft or kidnapping by foreigners.... Americans with substantial property abroad or at sea might well prefer to provide their own anti-theft defenses, rather than pay for a communal army which cannot be counted on to protect their property.... Contrary to public goods theory, even in this key case of defense from external attack, exclusion is not impossible and the marginal cost of serving additional persons generally is not zero.[29]

Moreover, as Buchanan concedes, a collective defense may be a service to one citizen and be considered a distinctly negative "service" by another:

> The common availability of collective goods or services does not, of course, imply that similar evaluations are placed on these by different persons. The Vietnam war effort demonstrated this

[27]Ibid., pp. 60-61.

[28]Ibid., p. 61 and 61n. Goldin amusingly adds: "A medieval lord could scarcely be a 'free rider' on a neighboring lord's defense efforts. If he did not have his own defenses, he would probably suffer attacks from his neighbor." Cf. Wicksell: "Side by side with the national army, many countries have voluntary rifle clubs and similar institutions which sometimes constitute no mean military force...." Knut Wicksell, "A New Principle of Just Taxation," in Musgrave and Peacock, *Classics*, p. 90.

[29]Goldin, "Equal Access," pp. 61-62.

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> point. The services of the plane that bombed North Vietman in October, 1968, were equally available to all U.S. citizens. But the value placed on these services may have ranged from significantly positive levels. . . to significantly negative levels for those who felt that continued bombing was both immoral and a barrier to peace negotiations.[30]

To Professor Buchanan, the "classic" example of a collective good is the lighthouse. The beams of the lighthouse are indivisible: "If one boat gets all the light beams, all boats may do likewise."[31] Or, as Samuelson has put it, "A businessman could not build it for a profit, since he cannot claim a price from each user."[32] The theory is that it would be virtually impossible for a lighthouse keeper to row out to each boat to demand payment for use of the light. And that hence lighthouses have always been supplied by government.

But, first, the problem has now been eliminated by modern technology. It is now technologically highly feasible for a lighthouse's rays to be available only to that boat that has the proper electronic equipment, and to pay a fee for the use of that equipment. But, apart from this, it turns out, as Ronald Coase has discovered, that from the seventeenth until the early nineteenth centuries, the British lighthouse system was developed and operated by private enterprise. The lighthouse owners hardly bothered about collecting a fee from each boat on the spot. Instead, the owners employed agents at ports who found out what routes each ship entering the port had sailed and therefore what lighthouses the ship had passed and charged them accordingly.[33] Furthermore, additional users of lighthouses will impose higher costs for providing them. More ships

[30]Buchanan, *Public Finances,* pp. 25-26. Buchanan errs, however, in claiming that "few persons" would place a negative value on internal law and order. Pacifists would, and how "few" they may be will vary, and their number is unknown in any case. Even the existence of *one* pacifist negates the very concept of defense as a collective good, just as the existence of one anarchist negates the very concept of a collective good supplied by the State.

[31]Ibid., p. 23.

[32]Paul A. Samuelson, *Economics,* 6th ed. (New York: McGraw-Hill, 1964), p. 159. In his 10th edition, Samuelson, perhaps in unacknowledged response to Professor Coase's noteworthy article (see below), gives the case away by adding, after "from each user" the words "without great difficulty" (1976, p. 160). For he thereby concedes that lighthouses are *not* "collective goods."

[33]"The tolls were collected at the ports by agents (who might act for several lighthouses). . . . The toll varied with the lighthouse and ships paid a toll, varying with the size of the vessel, for each lighthouse passed. It was normally a rate per ton (say ¼d or ½d) for each voyage. Later, books were published setting out the lighthouses passed on different voyages and the charges that would be made." R. H. Coase, "The Lighthouse in Economics," *Journal of Law and Economics* 17 (October 1974): 364-65.

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will increase the likelihood of congestion in the protected waters and will require more navigational aids.[34]

In his trenchant critique of the offhanded way in which economists, from Mill to Samuelson and Arrow, have wrongly used the lighthouse as an example of a collective good, Coase concludes:

> These references by economists to lighthouses are not the result of their having made a study of lighthouses or having read a detailed study by some other economist. Despite the extensive use of the lighthouse example in the literature, no economist, to my knowledge, has ever made a comprehensive study of lighthouse finance and administration. The lighthouse is simply plucked out of the air to serve as an illustration....
>
> This seems to me to be the wrong approach.... [G]eneralisations are not likely to be helpful unless they are derived from studies of how such activities are actually carried out within different institutional frameworks....
>
> The account in this paper of the British lighthouse system... shows that, contrary to the belief of many economists, a lighthouse service can be provided by private enterprise.... The lighthouses were built, operated, financed and owned by private individuals, who could sell the lighthouse or dispose of it by bequest. The role of the government was limited to the establishment and enforcement of property rights in the lighthouse. The charges were collected at the ports by agents from the lighthouses. The problem of enforcement was no different for them than for other suppliers of goods and services to the shipowner.[35]

The analogous navigational aid for air traffic, the services of the air-control tower, can be and is sold separately to individual consumers. Control towers will distribute radar information, for example, to whoever has radar equipment, but the equipment must be purchased by individual users. And heavier use of airspace or airport runways requires more navigational aids and therefore more expenses to service the users.[36]

Radio and television have been cited as collective goods since servicing another viewer allegedly involves no additional cost. But additional service is far from costless, *and* viewers are separable and

[34] Goldin, "Equal Access," p. 62.

[35] Coase, "The Lighthouse," p. 375. As Goldin remarks, "Lighthouses are a favorite textbook example of public goods, because most economists cannot imagine a method of exclusion. [All this proves is that economists are less imaginative than lighthouse keepers.]" Goldin, "Equal Access," p. 62.

[36] Since commercial airports are all owned by [largely municipal] government, the pricing of their runway and other services is scarcely akin to market pricing; generally, landing and takeoff fees are set far too low to clear the market, and the resulting shortage is rationed by increased and dangerous air congestion. See Ross D. Eckert, *Airports and Congestion* (Washington, D.C.: American Enterprise Institute, 1972).

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excludable; therefore radio and TV fail both tests of a collective good. An increased viewing audience means supplying more, and more varied, programs. And new users must either be supplied with a stronger signal or may require cable or stronger attennas because of the increased congestion. Moreover, consumers are excluded now from television. To watch television programs they must buy sets and then must either pay as they go (various forms of pay TV) or else advertisers must pay, imposing on many viewers the psychic costs of commercials. And public television imposes on its viewers the psychic costs of being subjected to lengthy requests for donations.[37]

Moreover, in a sense the collective goods case for radio and television proves too much. For movies may also be said to be "costless" if additional viewers fill empty seats in a theater. Must movies, too, be nationalized, be supplied only by government, and perhaps be free to all?

Research has also been termed a "collective good"; don't we all enjoy the benefits of the research and inventions of Edison, Faraday, et al., without paying for them? But of course we *do* pay for the fruits of research, and we pay separably. For we must purchase the papers or books of researchers, or pay fees for lectures, demonstrations, or consulting. Those who do not pay such fees are excluded from learning of or absorbing these new ideas. And, of course, the holders of patents and copyrights are able to obtain the income from these inventions or discoveries while excluding other producers.[38]

Again, this argument proves too much. For not only patents and inventions are produced by creators: There is also art, sculpture, music, literature, philosophy. Are we to say that all these products of the human spirit are "collective goods" because we cannot be fully excluded from enjoying the products of Beethoven, Shakespeare, or Vermeer? Must all artists therefore be nationalized?

Another commonly cited example of a collective good is insect control by airplane spraying. It is alleged to be impossible to exclude land underneath from being sprayed, and the marginal cost of adding more land sprayed is zero. But if new residents live in previously uninhabited areas, then extra cost is incurred in servicing them, and the same is true if they are engaged in activities that attract insects. More airplane time and fuel must be used as well as more spray. Furthermore, the airplane *could* often, if it wished, ex-

[37]See Goldin, "Equal Access," pp. 64–65.
[38]Ibid., p. 63–64.

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clude specific parcels of land from its spray. And more important, many of those receiving this "service" have not wanted it and have objected to the spraying as vigorously as the pacifist has protested the use of violence in defense. Indeed, a shift in public attitudes toward chemical sprays has greatly reduced their use in recent years. But if some people consider a service such as a spray as a "bad," how can it be an indivisible, positive collective good?

Moreover, as Goldin points out, individual consumers have another option: to buy their own spray guns and spray their own property. In that case, each individual could choose and pay for the type and amount of spray that he precisely desires.[39]

For many reasons, then, there are no collective goods, and even if there were, as we have already seen, their supply would be coercive if furnished by government and taxation. But there is yet another vital point: For even if a good or service could only be supplied "collectively," why must that collection be compulsory? Why couldn't individuals pool their resources voluntarily, as in club dues, and make voluntary contributions for the supply of the service?[40] Or, as Gustave de Molinari argued, couldn't a government even contract for the supply of collective services with private, competitive, and therefore more efficient firms?[41]

Or, as Spencer Heath urged, on the model of real estate developments, shopping centers, and hotels, couldn't such "collective" or "public" goods as police, fire, roads, sanitation, etc., be supplied by a large private firm with tenants paying for these services in their rents?[42]

Finally, if we look at human history, we find that every good, without exception, that economists glibly term a "collective good" has actually been successfully supplied on the free market. Not

[39] Ibid., p. 54.

[40] Cf. Melvin W. Reder, "Review of Baumol's *Welfare Economics and the Theory of the State*," *Journal of Political Economy*, December 1953, p. 539.

[41] Gustave de Molinari, *The Society of Tomorrow* (New York: G. P. Putnam's Sons, 1904), pp. 71–72, 80, 84–86. In earlier years, this Belgian-born nineteenth-century French economist believed that *all* services now supplied by government could be supplied better and more efficiently by privately competitive firms on the free market. See Gustave de Molinari, *The Production of Security* (New York: Center for Libertarian Studies, May 1977); and David M. Hart, "Gustave de Molinari and the Anti-Etatiste Liberal Tradition" (history honors thesis, Macquarie University, Australia, 1979).

[42] Spencer Heath, *Citadel, Market and Altar* (Baltimore: Science of Society Foundation, 1957). For the most developed work on the Heathian proposal, see Spencer Heath MacCallum, *The Art of Community* (Menlo Park, Calif.: Institute for Humane Studies, 1970). Disney World is a spectacular example of a successful business firm supplying all of these services out of tourists' fees.

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only do private guards and patrols exist, and private lighthouses in the past, but there have been societies, such as medieval Ireland, that supplied a complex network of defense service and insurance – including police, crime insurance, and competitive courts – without a State or taxation. Competing market courts serviced for centuries the vitally important fairs of Champagne in the Middle Ages. Common-law courts were marked by competitive, nongovernmentally appointed judges. Private guards and private arbitrators exist successfully even in our society where the State monopolizes most forms of defense.[43]

It seems clear, then, that voluntary rather than governmental supply of the collective good would be possible in every case; the only objection might be, not that the good – defense, firefighting, or whatever – *could not* be supplied, but that "too little" would be supplied. But that brings us to the second line of argument by the proponents of government.

External Benefits

If forced to retreat from the "strong" concept of collective goods, the advocates of government supply or subsidization of such goods, fall back on a "weak," and therefore more plausible, argument. Even though every collective good might be furnishable by private means, "not enough" will be supplied because of the difficulty or impossibility of capturing enough payment from "free riders" who benefit from these services without paying for their benefits. Government supply, or taxation of free riders to subsidize supplies, then becomes required in order to "internalize the external benefits" acquired, but not paid for, by the free riders.[44]

But this argument generates far more difficulties than it solves. It

[43] Thus see Joseph R. P.den, "Property Rights in Celtic Irish Law," *Journal of Libertarian Studies* 1 (Spring 1977): 81–95; Bruno Leoni, *Freedom and the Law* (Los Angeles: Nash, 1972); and William C. Wooldridge, *Uncle Sam the Monopoly Man* (New Rochelle, N.Y.: Arlington House, 1970).

[44] Gordon Tullock advances the curious argument that revolutions are impossible (or virtually so) because individual revolutionaries work and sacrifice whereas the entire public reaps the benefit; hence the public are free riders on the efforts of revolutionaries. (Gordon Tullock, "The Paradox of Revolution," *Public Choice* 9 (Fall 1971): 89–99.) If he were consistent, Professor Tullock should therefore advocate that government tax people and subsidize revolutionaries in order to solve the problem of "underproduction of revolution"! In point of fact, of course, revolutions *do* take place from time to time, and they occur because much of the public has placed high on their value scales the success of the revolution. In short, a strongly held ideology among the public can overcome the free-rider problem for revolution. People's "interest" is not only jobs or immediate monetary payment, but also the attainment of such concepts as justice, liberty, etc., none of which has any place in the economic calculus of the public-choice theorists.

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proves too much in many directions. In the first place, *how much* of the deficient good should be supplied? What criterion can the State have for deciding the optimal amount and for gauging by how much the market provision of the service falls short? Even if free riders benefit from collective service X, in short, taxing them to pay for producing more will deprive them of unspecified amounts of private goods Y, Z, etc. We *know* from their actions that these private consumers wish to continue to purchase *private* goods Y, Z, etc., in various amounts. But where is their analogous demonstrated preference for the various collective goods? We *know* that a tax will deprive the free riders of various amounts of their cherished private goods, but we have *no idea* how much benefit they will acquire from the increased provision of the collective good; and so we have no warrant whatever for believing that the benefits will be greater than the imposed costs. The presumption should be quite the reverse. And what of those individuals who dislike the collective goods, pacifists who are morally outraged at defensive violence, environmentalists who worry over a dam destroying snail darters, etc.? In short, what of those persons who find other people's good their "bad?" Far from being free riders receiving external benefits, they are yoked to absorbing psychic harm from the supply of these goods. Taxing them to subsidize more defense, for example, will impose a further twofold injury on these hapless persons: once by taxing them, and second by supplying more of a hated service.

Since the tax-and-subsidy, or government-operation, route abandons the process of the market, there is no way of knowing who the "negative free riders" are, and how much they will be suffering from an increased tax. We do have a pretty good idea, however, that one or more of these people exists: that there is at least one pacifist, antidam environmentalist, anarchist opposed to all government actions, etc., in every society. But in that case, the free-rider as well as the "stronger" collective-good argument for the neutrality of government falls to the ground.

The young Herbert Spencer, in his great treatise *Social Statics,* declared that an individual should be able to opt out of taxation, to "ignore the State," and to renounce its services.[45] Criticizing his own work a half-century later, Spencer, in his *Autobiography,* employs the free-rider argument. "Mr. Spencer," he charges,

> actually contends that the citizen may properly refuse to pay taxes, if at the same time he surrenders the advantages which

[45]Herbert Spencer, *Social Statics* (London: John Chapman, 1851), chap. 19, "The Right to Ignore the State," pp. 206–16.

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> State aid and State protection yield him! But how can he surrender them? In whatever way he maintains himself, he must make use of sundry appliances which are indirectly due to governmental organization; and he cannot avoid benefiting by the social order which government maintains. Even if he lives on a moor and makes shoes, he cannot sell his goods or buy the things he wants without using the road to the neighboring town, and profiting by the paving and perhaps the lighting when he gets there. And, though he may say he does not want police guardianship, yet, in keeping down footpads and burglars, the police necessarily protect him, whether he asks them or not. Surely it is manifest... that the citizen is so entangled in the organization of his own society that he can neither escape the evils nor relinquish the benefits which come to him from it.[46]

The later Spencer was properly refuted, on his own earlier grounds, by "S. R." "S. R." points out first that on the later Spencer's own grounds, a man *at least* has the right to refuse to pay for advantages that he *can* relinquish. "S. R." then quotes from the earlier Spencer's application of his "law of equal freedom":

> If every man has freedom to do all that he wills, provided he infringes not the equal freedom of any other man, then he is free to stop connection with the State—to relinquish its protection and to refuse paying toward its support. It is self-evident that in so behaving he in no way trenches upon the liberty of others; for his position is a passive one, and while passive he cannot become an aggressor.... He cannot be coerced into a political combination without a breach of the law of equal freedom; he *can* withdraw from it without committing any such breach; and he therefore has the right to withdraw.

"S. R." then proceeds: "Is a man who refuses to pay for incidental advantages he has not solicited an aggressor? Is it a breach of the law of equal freedom to withdraw from a combination that, in working for itself and pursuing its own benefit, indirectly benefits one who is perfectly willing to forego the blessings of the uninvited beneficence?" "S. R." then points out that Spencer is implicitly modifying his equal freedom formula to say that anyone can do whatever he wishes, provided not only that he does not infringe on anyone else's freedom, but *also* provided "that no one confers upon him benefits which he cannot wholly surrender while remaining a producer and trader."

"S. R." then tellingly supplies the logical *reductio* of the free-rider argument:

[46]Herbert Spencer, *An Autobiography* (New York: D. Appleton and Co., 1904), 1: 417–18.

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> Has an individual the right to withhold proper contributions from neighbors who, individually or collectively, benefit him by caring for their own interests? If my neighbors hire private watchmen, they benefit me indirectly and incidentally. If my neighbors build fine houses or cultivate gardens, they indirectly minister to my pleasure. Are they entitled to tax me for these benefits because I cannot "surrender" them?[47]

Thus the free-rider argument proves far too much. After all, civilization itself is a process of all of us "free-riding" on the achievements of others. We all free-ride, every day, on the achievements of Edison, Beethoven, or Vermeer. When capital investment increases, and technology improves, the real wages of workers and the standard of living of consumers increase, even though they have contributed nothing to these advances. By simply continuing to work and consume, laborers and consumers receive the benefits of the inventions and investments of others without paying for them. So what must we infer from this? Are we all to wear sackcloth and ashes? If our neighbors are wiser, prettier, or happier, we all benefit in countless ways. So what must we do about it? Must we all be taxed to subsidize their beauty and wisdom?

And if people feel that not enough beauty, wisdom, inventions, police protection, etc., will be provided by consumer payment and because of free riders, they are perfectly at liberty to subsidize provision of such goods on their own, individually or through societies or foundations. By doing so, the donor will demonstrate that, to him, the expected psychic benefit from his subsidy is worth more than the money he pays.

It will be objected that potential donors will not donate if they are rankled by the spectacle of free riders who stubbornly refuse to donate for the benefits they receive. And, further, that consumers on the market will not be willing to purchase these goods if they know that free riders abound. If we wished to moralize here, we might respond that these persons might be well advised to attend to their own affairs without wallowing in envy at benefits received by others. But, in any case, if the rankling at the existence of free riders is strong enough, these persons are always free to boycott the miscreants, either by not trading with them or by general ostracism.[48]

[47] "S. R.," "Spencer as His Own Critic," *Liberty* 14 (June 1904): 2.

[48] Attacking the later Spencer's argument, in *Man vs. the State,* for taxation for defense based on the free rider, "S.R." points out that Spencer "overlooked the fact that there are several methods of securing cooperation for necessary ends, some manifestly non-aggressive and consonant with the principle of equal freedom. It is, of

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The consumers or donors can also, if they wish, get around the free-rider problem by making contracts, either singly or in organized fashion, that will pay for the "collective good," but only *on condition* that everyone else, including the potential free riders, pay as well. This form of contract would enable those willing to pay, in effect, to put the choice to the free riders: Either you join in paying or the service will not be provided.[49]

Transaction Costs

It has been objected that the "transaction costs" of identifying the free riders or channeling donations, of organizing boycotts or of making conditional contracts, are "too high," and that therefore those who want these services are justified in turning to the government to force the free riders to pay.

There are several grave fallacies in the transaction costs argument for taxation. In the first place, it ignores the transaction costs of the government process itself. The implication is that government is a costless Mr. Fixit, levitating angelically above the fray and busily correcting "market failures." If private persons have difficulty in identifying free riders, will government be able to limit its taxation to free riders only? What of the external costs of the inevitable taxation beyond the free rider? And, as we have seen, since market and demonstrated preference through individual action is not available to government, there is *no way* that government can either identify the free riders or the "negative free riders," or to discover *how much* benefit each person would derive from the subsidized supply and therefore how much each person should be taxed. There are also the inevitable grave inefficiencies in the political supply of goods and services and in the political process itself that need not be expounded here. At any rate, there is no reason to assume that the transaction costs of turning to government will be lower than those of private operation, and every reason to assume the opposite.

Second, another definitive rebuttal of the transaction-cost argument for government is the impossibility of comparing transaction costs, not simply of private and government action, but at any time

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course, unfair for any man to enjoy the benefits of peace and stability while declining to share the risks, sacrifices, and burdens entailed by actual or probable attacks from within or without; but such an unsocial and mean-spirited individual can be brought to terms by the boycott, material and moral." "S. R.," "Spencer and Political Science," *Liberty* 14 (February 1904): 2.

[49]I am indebted to Dr. David Gordon of the Center for Libertarian Studies for pointing this out to me.

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and in any situation. For costs, like utilities, are subjective, and therefore nonmeasurable and noncomparable between persons. There is no such thing as social transaction costs or any social costs whatever.[50] Any government action will impose enormous psychic cost on the anarchist; any private action will do likewise for the dedicated totalitarian. How are we to compare them? If an entity does not and cannot exist, then it is senseless to take as one's goal that it be minimized.

And third, even if transaction costs were measurable and comparable, we must ask: What is so terrible about transaction costs? On what basis are they considered the ultimate evil, so that their minimization must override all other considerations of choice, freedom, or justice?[51] After all, if minimizing these dread costs were truly the be-all and end-all, we could all pledge to obey one dictator, one Brezhnev or Idi Amin, in all things, and then everyone would have the assurance of knowing everyone else's relevant value-scales. Other problems would abound, but at least transaction costs would be forced down to a minimum.

Coercion as "Really" Voluntary

A final fallback argument for the voluntariness of taxation and government asserts that every member of society wishes to pay for the collective goods but will do so only if everyone else pays. Therefore the *seeming* coercion of taxation is a fallacy, for *everyone* voluntarily pays in the serene knowledge that all beneficiaries are paying. In a kind of Hegelian leap, we are all voluntarily and cheerfully forcing ourselves to be free.[52]

This argument adds a heavy dose of mysticism to the other collective goods and external benefits arguments. For how do we *know* that everyone is voluntarily paying knowing that everyone else is doing so? There is no evidence, there is no social compact whatever to that effect. Is *all* that they pay supposed to be voluntary, or just

[50] Even Professor Buchanan, one of the founders of public-choice theory, admits the subjectivity and hence the noncomparability of costs. James M. Buchanan, *Cost and Choice: An Inquiry in Economic Theory* (Chicago: Markham, 1969).

[51] If transaction costs are to be absolute and override all other considerations, then the transaction-cost theorists are taking the very same position they deride in ethicists: that is, rendering their values absolute, with no trade-off for other values. If transaction-cost economists are to scorn ethicists for ignoring cost-benefit considerations, why are *they* to be allowed to ignore ethics?

[52] Professors Buchanan and Tullock and the public-choice theorists are the outstanding modern proponents of this theory, which was also enunciated by Professor Baumol. See William J. Baumol, *Welfare Economics and the Theory of the State* (Cambridge, Mass.: Harvard University Press, 1952), and idem, "Economic Theory and the Political Scientist," *World Politics,* January 1954, pp. 275–77.

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some? Are they perhaps in mourning that their payments are not higher? And what of the anarchist and the pacifist and the tax rebel? Is *their* bitter opposition to taxation only a cloak for their cheerful acceptance? On what basis are we supposed to accept this curious doctrine?

There is, in short, no warrant whatever for Baumol's contention that every individual prefers to be coerced into paying for a service rather than have none of it supplied at all. Moreover, this argument ignores the options as discussed above, of conditional contracts to finance the service voluntarily, or of voluntary boycotts of free riders.[53]

A popular argument holds that the fact of democracy establishes the voluntary nature of government. This idea need not detain us here long. As Herbert Spencer pointed out, democracy at best can only reduce the number of people being coerced; it does not eliminate coercion:

> By no process can coercion be made equitable. . . . The rule of the many by the few we call tyranny: the rule of the few by the many is tyranny also. . . . "You shall do as we will, and not as you will," is in either case the declaration; and if the hundred make it to the ninety-nine, instead of the ninety-nine to the hundred, it is only a fraction less immoral. Of two such parties, whichever fulfills this declaration necessarily breaks the law of equal freedom: the only difference being that by the one it is broken in the persons of the ninety-nine, whilst by the other it is broken in the persons of a hundred. And the merit of the democratic form of government consists solely in this, that it trespasses against the smallest number.[54]

[53]See Rothbard, *Toward a Reconstruction,* pp. 33ff. On collective goods and external benefits, also see Rothbard, *Man, Economy and State,* 2: 883–90.

Buchanan and public-choice theorists argue that the all-voluntarily-forcing-themselves process actually takes place at the basic "constitutional" level. But again there is no evidence for this whatever. If they have the American Constitution in mind, then they should realize that the Constitution was put across against the wishes of the majority of the public and that the Constitution makers were interested not in "general rules" for the benefit of all, but in pushing through measures – protective tariffs, opening up of export markets, repayment of public debt at far above market price, expanded bank credit for privileged groups, public works – for one set of people at the expense of another. Contrast James M. Buchanan and Gordon Tullock, *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (Ann Arbor: University of Michigan Press, 1962), with, among others, E. James Ferguson, *The Power of the Purse* (Chapel Hill, N.C.: University of North Carolina Press, 1961), and Jackson Turner Main, *The Antifederalists* (Chapel Hill: University of North Carolina Press, 1961).

Furthermore, even at best, the adoption of a constitution is scarcely evidence of unanimous voluntary consent to that document two centuries later.

[54]Spencer, *Social Statics,* p. 210.

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Spencer concludes that "the very existence of majorities and minorities is indicative of an immoral state." For the "enactment of public arrangements by vote," he points out, "implies that the desires of some cannot be satisfied without sacrificing the desires of others . . . , implies therefore, organic immorality."[55]

Spencer goes on to point out that the doctrine that men may only be taxed by their own consent implies their right not to pay taxes, to "ignore the State." He then notes the reply of the statists that "this consent is not a specific, but a general one, and that the citizen is understood to have assented to everything his representative may do, when he voted for him." Spencer's rebuttal to this democratic mythos is definitive:

> But suppose he did not vote for him; and on the contrary did all in his power to get elected some one holding opposite views—what then? The reply will probably be that, by taking part in such an election, he tacitly agreed to abide by the decision of the majority. And how if he did not vote at all? Why then he cannot justly complain of any tax, seeing that he made no protest against its imposition. So, curiously enough, it seems that he gave his consent in whatever way he acted—whether he said yes, whether he said no, or whether he remained neuter! A rather awkward doctrine this. Here stands an unfortunate citizen who is asked if he will pay money for a certain proferred advantage; and whether he employs the only means of expressing his refusal or does not employ it, we are told that he practically agrees; if only the number of others who agree is greater than the number of those who dissent. And thus we are introduced to the novel principle that A's consent to a thing is not determined by what A says, but by what B may happen to say![56]

The Unanimity Principle

Sensing the problems of coercion by majority rule, social theorists from Calhoun (the "concurrent majority" theory) to Wicksell and Buchanan (the Unanimity Principle) have been trying to arrive at a polity free of this coercion. Although the search for a way out of coercion may be commendable, the seeming voluntariness of the Unanimity Principle suffers from two grave flaws. First, Wicksell and Buchanan apply the Unanimity Principle only to *changes* in the status quo, that is, to *new* acts of taxation and expenditure. But this simply ratifies existing property titles, and assumes that these existing property titles are just and must be maintained. In short, the ratification of changes from the zero point only by unanimous con-

[55]Ibid., p. 211.
[56]Ibid., pp. 211-12.

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sent, virtually freezes that zero point permanently. But should it be? Suppose that, previous to the installation of the Unanimity Principle, a group of persons, either by their own violent conquest or through State action, had stolen and confiscated the property of another large group and called that property their own. The Unanimity Principle would then prohibit the victims from taking back their property, since such action would have to gain the consent of the robbers. In his classic article on the Unanimity Principle, Knut Wicksell first acknowledged this problem and then brusquely dismissed it. Thus Wicksell first conceded:

> If there are within the existing property and income structure certain titles and privileges of doubtful legality or in open contradiction with modern concepts of law and equity, then society has both the right and the duty to revise the existing property structure. It would obviously be asking too much to expect such revision ever to be carried out if it were to be made dependent upon the agreement of the persons primarily involved.[57]

But having admitted that, Wicksell then proceeded as if it had not been said, asserting that "no [such] measure should be carried out unless it have the prior unanimous or at any rate overwhelming support of the whole people."[58]

Second, the Unanimity Principle turns out to be something less than unanimous. Pacifists, tax rebels, and anarchists are apparently inconvenient to the goal of achieving unanimity in taxation, so the proponents speak of "relative unanimity" (Buchanan and Tullock), "approximate unanimity" (Wicksell), or "virtual unanimity" (the later Spencer). But these are all oxymorons, comparable to the phrase "only a little pregnant." Unanimity must mean consent by all and nothing less.[59] Anything less is necessarily coercive and not voluntary.[60]

[57]Knut Wicksell, "A New Principle of Just Taxation," in Musgrave and Peacock, *Classics,* p. 109.

[58]Ibid.

[59]Thus, "S. R." 's critique of the later Spencer's argument for compulsory military service, compulsory justice, and compulsory taxation, to the effect that there is "virtual unanimity" behind these forms of State action, pointed out: "The word virtual is fatal. The question is evaded, not answered. Has the one man, or the insignificant group of men, that refuses to support the State, even in the simplest of its functions, the right to stand alone, to ignore it? Spencer never refuted his own early demonstration of this right. . . ." "S. R.," "Spencer and Political Science," p. 2.

[60]Here we might note the curious position of Laffer-Wanniski that the tax rate that maximized government revenue along the "Laffer curve" is, for some obscure reason, *"the point at which the electorate desires to be taxed."* (Italics Wanniski's.) Jude Wanniski, "Taxes, Revenues, and the 'Laffer Curve' " in *The Economics of the Tax Revolt,* ed. A. Laffer and J. Seymour (New York: Harcourt Brace Jovanovich, 1979), p. 8.

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5. J.B. Say on Taxation

In contrast to almost all other economists, J. B. Say was astonishingly clear-sighted about the true nature of the State and of taxation. In Say there was no vain, mystical quest for a truly voluntary State or for a benign quasi-business firm supplying services to the grateful public. Say saw clearly that government supplies services *to itself* and its favorites, that all government spending is therefore consumption spending by the politicians and the bureaucracy, and that that spending is extracted by coercion at the expense of the taxpaying public.

As Say points out: "The government exacts from a taxpayer the payment of a given tax in the shape of money. To meet this demand, the tax-payer exchanges part of the products at his disposal for coin, which he pays to the tax-gatherers." Eventually, the government spends the money on its own needs, and so "in the end . . . this value is consumed; and then the portion of wealth, which passes from the hands of the tax-payer into those of the tax-gatherer, is destroyed and annihilated." Were it not for taxes, the taxpayer would have spent his money on his own consumption. As it is, "The state . . . enjoys the satisfaction resulting from that consumption."[61]

Say goes on to attack the "prevalent notion, that the values, paid by the community for the public service, return to it again . . . , that what government and its agents receive, is refunded again by their expenditures." Say is indignant:

> This is a gross fallacy; but one that has been productive of infinite mischief, inasmuch as it has been the pretext for a great deal of shameless waste and dilapidation. The value paid to government by the tax-payer is given without equivalent or return: it is expended by the government in the purchase of personal service, of objects of consumption. . . .[62]

At this point Say revealingly quotes with approval Robert Hamilton's likening of government to a robber in refuting the argument that taxation is harmless because the money is recirculated into the economy by the State. Hamilton compares this impudence to the "forcible entry of a robber into a merchant's house, who should take away his money, and tell him he did him no injury, for the money, or part of it, would be employed in purchasing the commodities he dealt in, upon which he would receive a profit." Say then adds that

[61] Jean-Baptiste Say, *A Treatise on Political Economy*, 6th ed. (Philadelphia: Claxton, Remsen & Haffelfinger, 1880), pp. 412–13.
[62] Ibid., p. 413.

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"the encouragement afforded by the public expenditure is precisely analogous."[63]

Say bitterly goes on to denounce the "false and dangerous conclusion" of writers who claim that public consumption increases general wealth. "If such principles were to be found only in books," Say went on, "and had never crept into practice, one might suffer them without care or regret to swell the monstrous heap of printed absurdity. . . ." But unfortunately they have been put into "practice by the agents of public authority, who can enforce error and absurdity at point of the bayonet or mouth of the cannon."[64] Once again, Say sees the uniqueness of government as the naked exercise of force and coercion.

Taxation, then, is the coercive imposition of a burden on members of the public for the benefit of consumption by the ruling class, by those in command of the government. Say writes:

> Taxation is the transfer of a portion of the national products from the hands of individuals to those of the government, for the purpose of meeting the public consumption of expenditure. . . . It is virtually a burthen imposed upon individuals, either in a separate or corporate character, by the ruling power . . . for the purpose of supplying the consumption it may think proper to make at their expense; in short, an impost, in the literal sense.[65]

Thus Say is not impressed with the notion, properly ridiculed by Schumpeter, that all of society somehow voluntarily pay their taxes for the general benefit; instead, taxes are a burden coercively imposed upon society by the "ruling power." Neither is Say impressed if the taxes are voted by the legislature: For "what avails it . . . that taxation is imposed by consent of the people or their representatives, if there exists in the state a power, that by its acts can leave the people no alternative but consent?"

Taxation, Say clearly pointed out, cripples rather than stimulates production, for taxation robs people of resources that they would rather use in a different way:

> Taxation deprives the producer of a product, which he would otherwise have the option of deriving a personal gratification from, if consumed . . . or of turning to profit, if he preferred to de-

[63] Ibid., p. 413n. Say likens government to a robber at another point. He states that government's claim to a right over individual property, which it makes through taxation, is pure usurpation. The government is no more the proper owner of its claimed property than a thief over the property he has robbed. Ibid., p. 414n.

[64] Ibid., pp. 414–15.

[65] Ibid., p. 446.

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> vote it to an useful employment. . . . [T]herefore, the subtraction of a product must needs diminish, instead of augmenting, productive power.[66]

Say continues with a devastating critique of the argument that taxation is useful in stimulating people's exertions and the development of industry. But first, industry is looted to satisfy the demands of the State, and hence productive capital is crippled:

> Mere exertion cannot alone produce, there must be capital for it to work upon and capital is but an accumulation of the very products, that taxation takes from the subject: . . . in the second place, it is evident, that the values, which industry creates expressly to satisfy the demands of taxation, are no increase of wealth; for they are seized on and devoured by taxation.

As for the argument that taxes stimulate exertions:

> To use the expedient of taxation as a stimulative to increased production, is to redouble the exertions of the community, for the sole purpose of multiplying its privations, rather than its enjoyments. For, if increased taxation be applied to the support of a complex, overgrown, and ostentatious internal administration, or of a superfluous and disproportionate military establishment, that may act as a drain of individual wealth, and of the flower of the national youth, and an aggressor upon the peace and happiness of domestic life, will not this be paying as dearly for a grievous public nuisance, as if it were a benefit of the first magnitude?[67]

Say is also properly critical of Ricardo for maintaining that the suppression of one branch of private industry by taxation will always be compensated by a diversion of capital to some other industry. Say rebuts that:

> I answer, that whenever taxation diverts capital from one mode of employment to another, it annihilates the profits of all who are thrown out of employ by the change, and diminishes those of the rest of the community: for industry may be presumed to have chosen the most profitable channel. I will go further, and say, that a forcible diversion of the current of production annihilates many additional sources of profit to industry. Besides, it makes a vast difference to the public prosperity, whether the individual or the state be the consumer. . . . [In the latter case] wealth and production decline in consequence, and prosperity vanishes, leaving behind the pressure of unremitting taxation.[68]

[66] Ibid., p. 447.

[67] Ibid., pp. 447, 447n–448n.

[68] Ibid., p. 452n. In a charming aside, Say chides Ricardo for erring because of his penchant for introducing "the unbending maxims of geometrical demonstration. . . ." For, "in the science of political economy, there is no method less worthy of reliance."

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Say concludes with a scornful attack on the very idea that taxation and government spending add to national wealth:

> It is a glaring absurdity to pretend that taxation contributes to national wealth, by engrossing part of the national produce, and enriches the nation by consuming part of its wealth. Indeed, it would be trifling with my reader's time, to notice such a fallacy, did not most governments act upon this principle, and had not well-intentioned and scientific writers endeavored to support and establish it.[69]

Say's basic recommendation on the tax question was, in consequence, simple, trenchant, and clear-cut: "The best scheme of finance is, to spend as little as possible; and the best tax is always the lightest."[70] In short, that government is best that spends and taxes least. But then, paraphrasing Thoreau's and Benjamin R. Tucker's logical extension of the similar conclusion of Jefferson: May we not say that that government is best that spends and taxes not at all?[71]

6. The Neutral Tax

Any quest for a nonredistributive neutral tax, such as free-market economists indulge in, must succeed in providing criteria for two basic questions about taxes: (a) *how much* taxes should be paid? and (b) *who* should pay them? The free market answers questions of "who" and "how much" very easily for its goods and services. But free-market economists have been singularly unsuccessful in providing either of these criteria for taxation.[72] Thus the answer of

[69] Ibid., p. 447.

[70] Ibid., p. 449. Here we may note with amusement Frédéric Bastiat's reaction to these passages of Say. In the light of Bastiat's reputation as a "laissez-faire extremist" in contrast to Say's "moderation," we might note that Bastiat was shocked at the extremism of Say's views: Doesn't the State supply *some* services to the public? Frédéric Bastiat, *Economic Harmonies* (Princeton, N.J.: D. Van Nostrand, 1964), p. 567.

[71] In a famous passage, Thoreau wrote: "I heartily accept the motto—'That government is best which governs least,' and I should like to see it acted up to more rapidly and systematically. Carried out, it amounts to this, which also I believe—'That government is best which governs not at all.'. . ." Or, as Tucker concluded succinctly: "That which governs least is no government at all." Henry D. Thoreau, "Civil Disobedience" [1849], in *Walden and Other Writings* (New York: Modern Library, 1937), p. 635; Benjamin R. Tucker, *Instead of a Book* (New York: B. R. Tucker, 1893), p. 14.

[72] Thus Ludwig von Mises, by far the most thoughtful and systematic of free-market economists, devotes only a few unsatisfactory paragraphs to the subject of a neutral tax, or indeed to taxation in general. While conceding the impossibility of a neutral tax in the real world, he maintains without demonstration that it *would* be possible in a world of general equilibrium. And, despite its conceded impossibility, he seems to advocate pursuing the neutral tax as an ideal. (He also does not explain why

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laissez-faire economists to the former question – that taxation should be limited strictly to protection or defense – founders, not only on the coercive nature of the payment, but also on the non-homogeneity of the defense service. Defense, as we have seen above, is not a homogeneous lump but a good available in different quantities and qualities, in marginal units. Since the free market has been abandoned in this area, there is no way to arrive at any rational criteria for the optimal total amount or distribution of government defense, or of any other good or service.

Tax-Payers and Tax-Consumers

It might be claimed that neutral taxation could be achieved in one way, if in no other: if the precise amounts that each individual paid in taxes were returned to him in government expenditure. Thus if A paid $1,000 in taxes in a certain year, B paid $500, and C paid $300, etc., then A would receive $1,000, B $500, and so on. It might be thought that such a taxation system would be at best absurd; for why construct an elaborate machinery that would simply take and then give back the same amounts to each person? Why then have taxation at all? But there is a grave flaw even in this attempt at a neutral tax: neglect of the bureaucratic handling charge.

For even if such a precisely equal tax-and-payment mechanism were constructed, there would have to be salaries paid to the bureaucracy administering the system (and to the politicians ruling the administrators). But these bureaucrats, then, would, in contrast to the rest of society, be net tax-receivers, and hence by at least the amount and dispensation of their salaries, the fiscal system could not be neutral to the market economy. For even if A, B, C, etc., paid and received the equivalent amounts, bureaucrats B_1, B_2, B_3 ... would be net tax-recipients, and in essence, would be paying no taxes at all. Their net incomes from functioning in the bureaucracy will necessarily have to be subtracted from the net incomes of other

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everyone's income would be equal in general equilibrium.) Apart from this, Mises maintains that taxes, despite "directly curtail[ing] the taxpayer's satisfaction," are "the price he pays for the services which government renders to... each of its members." He warns that taxes should remain "low," but the only criterion offered for this lowness is that they "do not exceed the amount required for securing the smooth operation of the government apparatus..."; in that case, "they are necessary costs and repay themselves." We may here reiterate all the questions we've discussed above, emphasizing such problems as: How much service? To *which* members? How about pacifists? Who pays the necessary costs and who gets repaid and then some? And, *What* exactly is the "smooth operation of the government apparatus," and should that be the overriding desideratum? Mises, *Human Action,* pp. 730–31, 733–34, 738.

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members of society. And therefore the very existence and operation of government, as John C. Calhoun brilliantly pointed out, establishes *at the very least* a class struggle between the net tax-recipients and the net taxpayers. Calhoun's analysis is worth quoting at length:

> So deeply seated, indeed, is this tendency to conflict between the different interests or portions of the community that it would result from the action of the government itself, even though it were possible to find a community where the people were all of the same pursuits, placed in the same condition of life, and in every respect so situated as to be without inequality of condition or diversity of interests. The advantages of possessing the control of the powers of the government, and thereby of its honors and emoluments, are, of themselves, exclusive of all other considerations, ample to divide even such a community into two great hostile parties.... And what makes this evil remediless through the right of suffrage of itself ... is the fact that, as far as the honors and emoluments of the government and its fiscal action are concerned, it is impossible to equalize it. The reason is obvious. Its honors and emoluments, however great, can fall to the lot of but a few, compared to the entire number of the community and the multitude who will seek to participate in them. But without this there is a reason which renders it impossible to equalize the action of the government so far as its fiscal operation extends....
>
> Few, comparatively, as they are, the agents and employees of the government constitute that portion of the community who are the exclusive recipients of the proceeds of the taxes. Whatever amount is taken from the community in the form of taxes, if not lost, goes to them in the shape of expenditures or disbursements. The two – disbursement and taxation – constitute the fiscal action of the government. They are correlatives. What the one take from the community under the name of taxes is transferred to the portion of the community who are the recipients under that of disbursements. But as the recipients constitute only a portion of the community, it follows, taking the two parts of the fiscal process together, that its action must be unequal between the payers of the taxes and the recipients of their proceeds. Nor can it be otherwise; unless what is collected from each individual in the shape of taxes shall be returned to him in that of disbursements, which would make the process nugatory and absurd. Taxation may, indeed, be made equal, regarded separately from disbursement. Even this is no easy task; but the two united cannot possibly be made equal.
>
> Such being the case, it must necessarily follow that some one portion of the community must pay in taxes more than it receives back in disbursements, while another receives in disbursements more than it pays in taxes. It is, then, manifest, taking the whole process together, that taxes must be, in effect, bounties to that portion of the community which receives more in disbursements

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> than it pays in taxes, while to the other which pays in taxes more than it receives in disbursements they are taxes in reality – burthens instead of bounties. This consequence is unavoidable. It results from the nature of the process, by the taxes ever so equally laid. . . .
>
> Nor would it be less a bounty to the portion of the community which received back in disbursements more than it paid in taxes because received as salaries for official services, or payments to persons employed in executing the works required by the government, or furnishing it with its various supplies, or any other description of public employment – instead of being bestowed gratuitously. It is the disbursements which give additional and, usually, very profitable and honorable employments to the portion of the community where they are made . . . and hence, to the extent that the disbursements exceed the taxes, it may be fairly regarded as a bounty. The very reverse is the case in reference to the portion which pays in taxes more than it receives in disbursements. With them profitable employments are diminished to the same extent, and population and wealth correspondingly decreased.
>
> The necessary result, then, of the unequal fiscal action of the government is to divide the community into two great classes: one consisting of those who, in reality, pay the taxes and, of course, bear exclusively the burthen of supporting the government; and the other, of those who are the recipients of their proceeds through disbursements, and who are, in fact, supported by the government; or in fewer words, to divide it into tax-payers and tax-consumers.
>
> But the effect of this is to place them in antagonistic relations in reference to the fiscal action of the government and the entire course of policy therewith connected. For the greater the taxes and disbursements, the greater the gain of the one and the loss of the other, and vice versa; and consequently, the more the policy of the government is calculated to increase taxes and disbursements, the more it will be favored by the one and opposed by the other.
>
> The effect, then, of every increase is to enrich and strengthen the one, and impoverish and weaken the other.[73]

Thus if a bureaucrat receives an income of $30,000 per year, and pays $10,000 to the government in taxes, he is in reality not paying taxes at all. His tax payment is a bookkeeping fiction; in reality, he is simply a net tax-consumer to the tune of $20,000.

Calhoun has thus shown that the very existence of taxation creates at least two conflicting classes: the ruling and the ruled, and that the ruling class are the net tax-consumers and the ruled the net taxpayers. The ruling classes comprise the full-time politicians and

[73]John C. Calhoun, *A Disquisition on Government* (New York: The Liberal Arts Press, 1953), pp. 14–18.

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bureaucrats receiving government salaries, as well as the private sellers of goods and services to the governments or recipients of outright government subsidy. There is hence no way for government or for taxation to be neutral. Moreover, the greater the amount and degree of taxation /expenditures by government, the more important will be this unneutrality, this diversion of output and income from producers on the market to the State and the receivers of its largess. The greater the extent of government operation, therefore, the greater the class conflict in the society.

Proportional Taxation

Setting aside for a moment the problem of inherent nonneutrality stemming from the existence of taxation and expenditures, let us examine further the specific types or forms of taxes. Is there any form that might be called neutral to the market? Many economists have assumed that proportional taxation for each taxpayer (whether on incomes, property, or intangible "sacrifice") will leave the distribution of income or wealth the same as before, and therefore be neutral to the market. Thus to Edwin Cannan proportional property taxation serves as a "sufficiently accurate standard" of neutrality, so that "the distribution of wealth between individuals" is the same as "it would be in the absence of State action."[74] To Blum and Kalven, proportional sacrifice, presuming this intangible could be measured, has "the virtue . . . that it remains neutral as to the relative distribution of satisfactions among taxpayers. Under it they are all equally 'worse off' after taxes."[75]

At first blush, proportionality appears to leave market distribution the same. If, for example, a tax of 10 percent is levied on all incomes, is not the distribution of incomes left the same (setting aside the above insoluble problem of net tax-consumers)? It is true that if A earns $30,000 a year, B earns $20,000, and C earns $10,000, and each pays 10 percent, the relative proportions of their income after taxes will remain the same as before ($27,000, $18,000, and $9,000). But this question misconceives the very idea of the neutral tax. The point of a tax neutral to the market is *not* to leave the income distribution the same as if a tax had not been imposed. The point of a neutral tax is to affect the income "distribution" and all other aspects of the economy in the same way as if the tax were a

[74]Edwin Cannan, "Minutes of Royal Commission on Local Taxation, 1899," in *Readings in the Economics of Taxation,* ed. R. Musgrave and C. Shoup (Homewood, Ill.: Irwin, 1959), pp. 182–83.

[75]Walter Blum and Harry Kalven, Jr., *The Uneasy Case for Progressive Taxation* (Chicago: University of Chicago Press, 1953), p. 44.

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free-market price. Only if a tax has the effect of a surrogate free-market price, only if, in a profound sense, it is *part of the market,* could it be neutral to that market. And it should be evident that no free-market price leaves income distribution the same. If every market price were proportional to the income of the purchaser, if David Rockefeller had to pay $1,000,000 for a box of Wheaties, then there would be no point in having a higher income, and we would have an extraordinarily complex and unworkable form of compulsory equality of incomes.

The market does not form prices proportional to incomes; the market is characterized by uniform pricing, by a strong tendency toward the same price for the same good or service regardless of the income or personality of the buyer.[76]

Taxation and Benefits

If the market charges all consumers the same price for a particular service, it would seem that some form of equal (rather than equiproportional) taxation might be neutral to the market. One time-honored criterion attempting to arrive at such neutrality is the "benefit" principle: that each should pay taxes in accordance with the benefits he receives from the State. Those receiving the same benefits would pay the same amount of tax. There are many grave problems with this approach, however. First, in contrast to the marketplace, there is no way whatever for an external observer to gauge anyone's benefits as derived from government. Since "benefits" are subjective, we cannot measure anyone's benefit on the market either, but we *can* conclude, from a person's voluntary purchase, that his (expected) benefit was greater than the value to him of the money given up in exchange. If I buy a newspaper for 25 cents, we can conclude that my expected benefit is greater than a quarter. But since taxes are compulsory and not voluntary, we can conclude nothing about the alleged benefits that are paid for with them. Suppose, in analogy, that I am forced at gunpoint to contribute 25 cents for a newspaper and that that newspaper is then forcibly hurled at my door. We would be able to conclude nothing about my alleged benefit from the newspaper. Not only might I be willing to pay no more than 5 cents for the paper, or even nothing on some days, I might positively detest the newspaper and would demand payment to accept it. From the fact of coercion there is no way of telling. Except that we can conclude that many people are

[76] A similar critique could be leveled against any form of proportional tax, e.g., on sales or property.

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not getting 25 cents' worth from the paper or indeed are positively suffering from this coerced "exchange." Otherwise, why the need to exercise coercion? Which is all that we can conclude about the "benefits" of taxation.[77]

To Adam Smith, the benefit principle dictated proportional income taxation: "The subjects of every state ought to contribute toward the support of government, as nearly as possible . . . in proportion to the revenue which they respectively enjoy under protection of the state."[78]

Other writers have even used the benefit principle to justify progressive taxation. Yet there is no warrant whatever for assuming equi-, or even more than, proportional benefit from government. In one model the alleged benefit from government is to be simply deduced from one's income, and it is claimed that this indicates a proportionately greater "benefit from society." But there are many flaws with this approach. For first, since everyone benefits from participating in society, the fact that A earns more than B must be attributed to individual differences in ability or productivity rather than to the benefits of society. And second, "society"—the pattern of voluntary exchanges of goods and services—is most emphatically not identical to the State, the coercive extractor of taxation.

If, indeed, we are to tax people in accordance with their benefit from government, we would have to tax all the net tax-consumers to the amount of their subsidies. We would have to tax 100 percent of the salaries of bureaucrats, of the incomes of welfare recipients and of defense contractors, etc. We would then have our ideal model of the neutral tax where all recipients of government funds would systematically repay them to the taxpayers—an absurd if rather charming state of affairs. If we leave subsidies to concentrate

[77]In contrast to benefit theory, which naively assumes that people "purchase" government services in much the same way as they purchase goods and services on the market, at least sacrifice theory assumes, in the words of Blum and Kalven, "that the taxes are a necessary evil falling upon a distribution of money, and therefore upon a distribution of satisfactions, which is otherwise acceptable." *Uneasy Case,* p. 44. The basic problem with sacrifice theory is that it doesn't explain *why* people must bear the burdens and sacrifices of taxation, why, that is, we must turn from talk of benefits and free choice on the market to talk of burden and sacrifice in the sphere of government.

[78]Adam Smith, *The Wealth of Nations* (New York: Modern Library, 1937), p. 777. Smith added immediately that "the expense of government to the individuals of a great nation, is like the expense of management to the joint tenants of a great estate, who are all obliged to contribute to their respective interests in the estate." Presumably, however, these tenants also get benefits from the estate greater than their pro-rata expenses, and if they do not, or even if they do, they can sell their share and leave—an option not available to the taxpayer.

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only on supposedly common services such as police protection, then we would have to conclude that the poor benefit far more from police protection than the wealthy, since the wealthy could far better afford to pay for their own protection. We would therefore have to conclude, not that the rich benefit as much as or more than the poor, but far less. We would have to conclude that the poor and the infirm, far more in need of protection than the rich, should be taxed far more heavily than the rich and the able-bodied.[79]

Moreover, the market is misconstrued by the benefit principle. For on the market people do not pay in accordance with benefits received. The chess addict and the indifferent player pay the same price for the same chess set, and the opera enthusiast and the novice pay the same price for the same ticket. On the market, people tend to pay the *same* price for the same good, regardless of benefit. The poor and the weak might be the most eager for protection, but, in contrast to the benefit principle, they would not pay more for the same degree of protection on the market. And finally, everyone on the market enjoys a net benefit from exchange. If the entire benefit were taxed away (assuming this subjective concept could be measured), then this practice would totally violate market principles, where net benefits from exchange are always maintained.

The Equal Tax

If the market means having everyone pay the same price for the same service, perhaps then each person should pay the same tax, equal in absolute amount? The equal tax, or "poll tax," is surely a far closer approximation to neutral taxation than any of the more common forms of taxation. It would indeed preserve the market principle of same price for same service. It would also be particularly appropriate for a democratic polity, where one person, one vote prevails, or for a regime that attempts to adhere to the principle of "equality before the law."[80]

[79]Mill put the case very well: "If we wanted to estimate the degrees of benefit from the protection of government we should have to consider who would suffer most if that protection were withdrawn; to which question if any answer could be made, it must be that those would suffer most who are weakest in mind or body, either by nature or by position. Indeed, such persons would almost infallibly be slaves. If there were any justice, therefore, in the theory of justice now under consideration, those who are least capable of helping or defending themselves, being those to whom the protection of government is the most indispensable, ought to pay the greatest share of its price. . . ." John Stuart Mill, *Principles of Political Economy* (New York: D. Appleton & Co., 1901), 2: 398.

[80]In recent years, the poll tax was used to designate a voting requirement, in effect a tax on voting, in the southern states. But originally, the poll tax was simply an equal

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But even the equal tax cannot be said to be neutral to the market. In the first place, it is impossible for observers outside the market, such as government, to gauge what service is "equal" to another service. Equality of service is not technological identity but similarity in the minds of the consumers. Only the free market, then, can determine different qualities or degrees of a service. Second, and even more important, there is no indication that for a particular taxpayer, the government is supplying a "service" at all. Since the tax is compulsory, it may well be that the "service" has zero or even negative value for individual taxpayers. Thus, a pacifist, philosophically opposed to any use of violence, would not consider a tax levied for his and others' police protection to be a positive service; instead, he finds that he is being compelled, against his will, to pay for the provision of a "service" that he detests. In short, equal pricing on the market reflects demands by consumers who are voluntarily paying the price, who, in short, believe that they are gaining more from the good or service than they are giving up in exchange. But taxation is imposed on all people, regardless of whether they would be willing to pay such a price (the equal tax) voluntarily, or indeed whether they would voluntarily purchase any of this service at all.

The poll tax works particular hardship on those who would not ordinarily be participating in the market economy. Hence it (as well as the income tax) is payable in money and has been used as a fearsome whip to force natives in undeveloped countries out of subsistence or barter production and into working for money wages. Working for capitalists becomes the only way these natives can pay the tax. Thus Sir Percy Girouard, the British governor of Kenya, freely admitted, in the early twentieth century, that taxation was levied on the native to force him to go to work for British employers. The hut tax "is the only method," opined Sir Percy, "of compelling the native to leave his reserve for the purpose of seeking work. Only in this way can the cost of living be increased for the native."[81] In the Congo Free State, the problem in that Belgian colony, as Parker Moon put it, was: "Would the natives willingly go

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tax per head, and the payment for voting was simply one method of enforcing the tax. On poll taxes, see Merlin H. Hunter and Harry K. Allen, *Principles of Public Finance* (New York: Harper & Bros., 1940), pp. 265–70. Many early poll taxes were graduated rather than uniform. C. F. Bastable, *Public Finance* (London: Macmillan and Co., 1895), pp. 433–34.

[81] Cited in Parker T. Moon, *Imperialism and World Politics* (New York: Macmillan Co., 1930), p. 132. In South West Africa, the British accomplished the same purpose with a dog tax, levied per native dog. "Many of the natives, of course, were too poor to pay any such tax, and consequently in four months over one hundred members of

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out into the jungle to collect rubber and tusks for the State?" For, "little appreciating the dignity of labor, the Congo negroes evinced a marked distaste for the task which their humane sovereign expected them to perform. Accordingly, another civilized innovation was introduced—taxes."[82] Moon illuminates the relationship between taxation and forced labor in colonial countries:

> In tropical Africa . . . the problem is how to make the natives work at all, for Europeans. Actual slavery is everywhere condemned, and vanishing. . . . Compulsory labor, once the fashion in Central Africa, is falling more and more under censure, though it is still utilized by governments when they need natives for railroad or road construction, or other public works. . . .
>
> Taxation is a favorite method of stimulating native industry. In many African colonies hut and poll taxes are imposed, ranging from fifty cents to several dollars per capita. The amount seems small enough, by our standards, but to the negro without money it is a large sum. He can earn it by working on a plantation or in a mine, for white employers, at wages that vary from five cents a day, or less, in Congo, Northern Rhodesia, and other regions, to six or seven cents in Kenya, perhaps twenty cents in the interior of Nigeria, and fifty cents or more in South Africa. At such wages it takes a native months to save enough to pay the tax for his family.[83]

Conclusion

Free-market economists have successfully extended their critical analyses of government to all areas of State operation and intervention—all except one. Taxation, the heart and soul of government, has escaped unscathed. Free-market economists have either avoided the topic of taxation altogether or have provided concepts that, while claiming to help limit government, have in reality offered apologias for the extension of State power. The view that income taxes are "better" than excise taxes; the call for proportional or degressive income taxation; the Friedman negative income tax; the Buchanan-Tullock Unanimity Principle; and the collective-goods, external-benefits, and transaction-costs arguments for government and taxation, have all served to place the *imprimatur* of economics on the status quo or on extensions of government rather than to limit or roll back State power. All this has followed the course traced

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the Bondelzwarts tribe alone were condemned, for non-payment of the tax, to pay a fine of two pounds or spend two weeks in jail. To obtain the money for tax and fines, the natives would have to work for white ranchers and mine-owners." Ibid., p. 504.

[82] Ibid., p. 86.

[83] Ibid., p. 563.

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by Bertrand de Jouvenel three decades ago: From the idea of divine right down to modern times concepts originally meant to limit State power have been turned by the State and its advocates into *rationales* for its further extension.[84]

Much the same thing has happened to the noble concept of neutral taxation. The idea that taxation, and therefore government's fiscal operation, should be neutral to the market—should not disturb the operations of the market nor divert it from its free course—is a noble but impossible one. As we have seen in this paper, taxation can never be neutral to the market, and the impossibility of this dream is rooted in the very nature of taxation and government. Neutral taxation is merely a chimera. It is perhaps because of this impossibility that this concept, in the hands of the modern public-choice theorists and others, has so quickly become yet another device for ratifying the status quo of State power.

We are forced, then, to the realization of crucial points from which free-market economists seem to have been fleeing as from the very plague. That neutral taxation is an oxymoron; that the free market and taxation are inherently incompatible; and that therefore either the goal of neutrality must be forsaken, or else we must abandon the institution of taxation itself.

[84] Bertrand de Jouvenel, *On Power, Its Nature and the History of Its Growth* (New York: Viking Press, 1949).

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PUBLIC GOODS AND THE THEORY OF GOVERNMENT

Joseph P. Kalt

1. The Theory of Public Goods

The economist is indeed in a difficult position. Very often he enters his profession motivated by a desire to in some way effect social reform, yet an intellectually honest and strict adherence to a *wertfrei* methodology often confines him to an ivory tower. The rigorous formulation and application of the criteria of economic efficiency have seemed to hold the most promise of freeing the economist so that he may finally utter the words "better" or "worse."

At least since the publication of A. C. Pigou's *The Economics of Welfare* in 1932, economists have accepted the presence or absence of Pigovian marginal inequalities, which result in differences between private and social costs, as the basic criteria of market efficiency and the touchstone of prescriptive conclusions.[1] The case for the expansion of the public sector based on the existence of externalities has been significantly challenged by the important work of Coase[2] and others.[3] Coase views the existence of externalities as fundamentally a problem of indefinite property titles. Under the influence of this view, economists have increasingly based the case for state intervention into exchange and production on the ex-

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The author is Assistant Professor of Economics at Harvard University, Cambridge, Massachusetts 02138.

[1] A. C. Pigou, *The Economics of Welfare* (London: Macmillan & Co., 1960).

[2] Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics* 3 (October 1960): 1-44.

[3] See for example Harold Demsetz, "The Exchange and Enforcement of Property Rights," *Journal of Law and Economics* 7 (October 1964): 11-26; Ralph Turvey, "On Divergences between Social Cost and Private Cost," *Economica* 29 (November 1962): 309-13.

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istence of the particular external effects associated with public goods, for which the assignment of property rights offers no apparent remedy. According to Samuelson, who is most commonly associated with this position because of his important formal statements of the theory, it is the theory of public goods that "explicitly introduces the vital external interdependencies that no theory of government can do without."[4]

This paper challenges the two conclusions most frequently drawn from the theory of public goods: (1) that the inefficiencies associated with the market production of public goods are eliminated or reduced by transfer to the public sector; and (2) that the theory of public goods is the basis for a positive theory of the state. Although the former conclusion has been under a fair amount of attack in recent years, the latter has rarely been challenged explicitly. Some economists have challenged the theory of public goods by arguing that the "polar" case of publicness is unrealistic.[5] Nevertheless, it seems obvious that some goods do exhibit substantial publicness, and therefore the analysis here concerns itself not so much with the validity of the publicness concept as with the institutional factors that affect the efficiency of the provision of public goods when it is accomplished through the political means. It is hoped that the analysis will also have implications for the broader questions of the logic of group action and, especially, the theory of the state.

Definition

Over twenty-five years ago Samuelson formalized the definition of and efficiency conditions for public goods. This definition has served as the basis for his own prescriptive theory of public finance and was also the implicit foundation of the earlier theories of such economists as Wicksell,[6] Lindahl,[7] and Bowen.[8] Samuelson wrote:

> I explicitly assume two categories of goods: ordinary private consumption goods $(X_1, X_2 \ldots, X_n)$ which can be parceled out among different individuals $(1, 2, \ldots, i, \ldots s)$ according to the re-

[4]Paul Samuelson, "A Diagrammatic Exposition of a Theory of Public Expenditure," *Review of Economics and Statistics* 37 (November 1955): 350.

[5]John G. Head, "Public Goods and Public Policy," *Public Finance* 17 (1962): 197–219.

[6]Knut Wicksell, "A New Principle of Just Taxation," in *Classics in the Theory of Public Finance*, ed. R. A. Musgrave and Alan Peacock (New York: Macmillan Co., 1958), p. 82.

[7]Eric Lindahl, "Some Controversial Questions in the Theory of Taxation," in *Classics*, pp. 214–32.

[8]Howard R. Bowen, *Toward Social Economy* (New York: Rinehart and Co., 1948), pp. 172–80.

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lations $x_j = \sum_{1}^{s} X_j^i$; and collective consumption goods $(X_{n+1}, \ldots X_{n+m})$ which all enjoy in common in the sense that each individual's consumption of that good leads to no subtraction from any other individual's consumption of that good, so that $X_{n+j} = X_{n+j}^i$ simultaneously for each and every i^{th} individual and each collective consumption good.[9]

Given this formulation, publicness can be seen as joint supply in the sense that the provision of a public good to one individual simultaneously makes that good available to another individual. Looking at the other side of the coin, Musgrave has described Samuelsonian publicness as jointness in consumption.[10]

The existence of jointness attributes alters the usual Pareto-optimizing equality of marginal rates of substitution (MRS) and marginal rates of transformation (MRT). In the case of a private good and two individuals, A and B, it is required that $MRS^A = MRS^B = MRT$. In the case of publicness, however, the marginal rates of substitution must *sum* to the marginal rate of transformation such that $MRS^A + MRS^B = MRT$.[11]

Samuelson would like to maintain that this alteration in optimality conditions requires a system of "multiple" or "differential" pricing that the market cannot provide. The existence of jointness characteristics apparently gives rise to external effects that confound market efficiency. Since the purchase of a public good by one person simultaneously makes the good available to other individuals, it is in the interest of each individual to underreveal his own demand in the expectation that others will make the good available to him through their purchases. With each individual voluntarily acting in this way, the aggregate effect will be the underproduction or nonproduction of public goods.

From this free-rider effect is derived the prescriptive conclusion associated with the theory of public goods. Since it would be patently contrary to the usual assumptions of utility theory to assume that individuals would voluntarily contribute (pay) an amount equal to their marginal benefits from a public good, "government must step in and compulsion is called for."[12] That is,

[9] Paul Samuelson. "The Pure Theory of Public Expenditure," *Review of Economics and Statistics* 36, no. 4 (November 1954): 387.

[10] Richard Musgrave, *The Theory of Public Finance* (New York: McGraw-Hill, 1959), p. 8.

[11] For a clear statement of these conditions see Head, "Public Goods," p. 199.

[12] Musgrave, *Theory of Public Finance,* p. 10.

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the inefficiencies associated with the private provision of public goods must be corrected by state action.

That this is the conclusion of most economists is perhaps beyond dispute. Indeed, it may be the most prevalent, and to some the *only*, prescriptive conclusion in all of economic theory. Certainly most students of economics encounter it in their introduction to public finance. Then, too, Samuelson has chosen to call his theory a "pure theory of public expenditure." Possible breaches of the *wertfrei* dictum notwithstanding, however, if it can be shown that there are reasons to believe that the state provision of public goods is inefficient, then the prescriptive conclusion is unwarranted on *a priori* grounds alone. This is absolutely true if there are necessary or inherent inefficiencies associated with state provision, in a manner analogous to those associated with the private provision of public goods. First, however, an important clarifying point should be made.

Publicness and Exclusion

When the confusion in Samuelson's formulation of the theory of public goods is cleared up, the result is some important initial qualifications of the prescriptive conclusion. In response to criticisms of his prescriptive theory, Samuelson has argued that it is at its *a priori* strongest only at the "polar" extreme of complete jointness.[13] Demsetz has shown, however, that in the absence of uneconomical costs to excluding non-purchasers of even a "polar" public good, the market can produce the required system of multiple pricing.[14] The concept of exclusion costs thus becomes central to the theory of public goods and any conclusions drawn from it.

Although he is not explicit on the issue, Samuelson apparently regards exclusion costs as arising as some function of publicness characteristics. At first sight, this seems commonsensically true. As Head has pointed out, however, the presence of jointness does not necessarily imply the existence of exclusion problems.[15] Many goods that exhibit elements of Samuelsonian publicness such as theatrical performances, television (with descrambling devices),

[13] Paul Samuelson, "A Diagrammatic Exposition of a Theory of Public Expenditure," *Review of Economics and Statistics* 37, no. 4 (November 1955): 350; idem, "Public Goods and Subscription T.V.: Correction of the Record," *Journal of Law and Economics* 7 (October 1964): 81-83.

[14] Harold Demsetz, "The Private Production of Public Goods," *Journal of Law and Economics* 13 (October 1970): 295-306.

[15] Head, "Public Goods," pp. 205-7.

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and transportation facilities pose no uneconomical pricing problems. Other public goods such as neighborhood recreation facilities, natural scenery, and even defense services can conceivably be efficiently priced and produced through tie-in arrangements with private goods.[16]

Similarly, the presence of exclusion costs does not necessarily imply the presence of jointness. If, for example, non-purchasers of such private goods as automobiles cannot be excluded from consuming (through theft) these goods, each individual will have some incentive to allow others to purchase automobiles for him to consume (steal). A free-rider effect, then, will prevail if for some reason there are significant costs to excluding non-purchasers. Although some economists have expressed a desire to redefine "public goods" as those goods for which exclusion is impossible,[17] such a definition is not what is usually meant by "publicness" (i.e., jointness), nor is it necessarily related to that concept.

The free-rider effect operates only in the absence of a means of exclusion, and therefore some economists have taken pains to stress *both* the element of exclusion costs *and* Samuelsonian publicness in their prescriptive theories of public goods. Both Musgrave[18] and Bowen[19] employ the concept of "impossibility of exclusion" as a necessary precondition for their conclusions. "Impossibility" is most properly interpreted as the absence of an economical means of exclusion in the market. The conclusion from this analysis of publicness and exclusion, as Demsetz[20] and Minasian[21] have stressed, is that publicness, by itself, carries no institutional implications and that even the "ideal" state is nothing more than an exclusion device.

It is hoped that to this point we have been able to define the attributes of a good that might give rise to free-rider demand distortions and to delimit those conditions under which such distortion will actually occur. Namely, in at least those cases where the market cannot provide an economical means of excluding non-purchasers of a public good, Pigovian marginal inefficiencies will result. Merely to show that imperfection exists, however, is not to imply that any possible alteration can achieve or even more closely approach perfection.

[16] Demsetz, "Exchange and Enforcement," pp. 19–23.
[17] Demsetz, "Private Production," p. 306.
[18] Musgrave, *The Theory of Public Finance*, p. 8.
[19] Bowen, *Toward Social Economy*, p. 172.
[20] Demsetz, "Private Production," p. 306.
[21] Jora Minasian, "Television Pricing and the Theory of Public Goods," *Journal of Law and Economics* 7 (October 1964): 78–79.

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Efficiency Requirements under State Provision

The conditions of efficiency in the provision of public goods, as put forth by Samuelson, are independent of institutional arrangements. If we view the compulsory tax payments collected by the state as the "prices" of public goods that individuals "pay" under a system of state provision, then efficiency is obtained when each individual "pays" a price just equal to his marginal valuation of a unit of a public good. As explained above, the jointness characteristic then implies that a system of *differential* tax payments is necessary for efficiency, an implication of Samuelson's exposition that has been emphasized in recent work by such writers as Baumol,[22] Johnson and Pauly,[23] and Buchanan.[24] The necessity of differential taxation is also central to earlier expositions of the "voluntary theory of public finance" associated with Wicksell, Lindahl, and others.[25] As Wicksell wrote, "Now it is correct that efficiency requires approximate equality between this marginal utility of the public good and the price (or tax) paid therefore. Otherwise the individual would desire a restriction on further expansion of the public service and of the related expenditure.[26]

If tax payments do not vary with individuals' marginal valuations, there are necessarily marginal inequalities. The question of whether the political mechanism can provide public goods efficiently then becomes the question of whether the political mechanism can economically provide a system of differential taxation, in which each individual actually pays according to his marginal valuations of the goods provided.

2. The Logic of Coercive Action

Only if the question is begged by assuming a costless, all-knowing, and benevolent "Nirvana State"[27] that, by definition, achieves the optimum, can it be argued that the political mechanism is necessarily efficient in providing public goods. This is, of

[22] William J. Baumol, *Welfare Economics and the Theory of the State* (Cambridge, Mass.: Harvard University Press, 1965), pp. 21-22.

[23] David Johnson and Mark Pauly, "Excess Burden and the Voluntary Theory of Public Finance," in *Theory of Public Choice*, ed. James Buchanan and Robert D. Tollison (Ann Arbor: University of Michigan Press, 1972), p. 100.

[24] James M. Buchanan, *The Demand and Supply of Public Goods* (Chicago: Rand McNally, 1968), pp. 127-31.

[25] See Wicksell and Lindahl in *Classics* as well as Ugo Mazzola, "The Formation of the Prices of Public Goods," ibid., pp. 37-47.

[26] Wicksell, ibid., p. 82.

[27] Harold Demsetz, "Information and Efficiency: Another Viewpoint," *Journal of Law and Economics* 12 (April 1969): 1-3.

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course, to say that it cannot be so argued. In fact, given any political decision-making process from one-man despotism to just short of unanimity and given realistic assumptions concerning human motivation, there is a strong case that the political provision of public goods is inefficient. Insofar as it ultimately depends on the free-rider effect, this case exactly parallels the analysis of private production of public goods.

Until recently, the realities of political action have been spared economic analysis, but economists such as Olson,[28] Downs,[29] and Buchanan and Tullock,[30] have begun to remedy this situation with their pioneering works. The analysis here will be conducted within the general economic framework of these studies. In analyzing the effectiveness of the state as a producer of public goods, we will look at both totalitarian despotism and at some generalized form of public, democratic choice. The unanimity decision rule is a special case (technically nonpolitical) and will also be discussed below. In accepting a general economic framework of analysis, we have made the usual assumptions of decision theory. Namely, it is assumed that there is substantial independence, i.e., "selfishness," in individuals' utility functions. The effect on an economic analysis of dropping this assumption is interesting and will be briefly discussed. It is also assumed that preferences are revealed only through cost-bearing action.

Disregarding for the moment the degree of interdependence (e.g., benevolence) in the utility function of a despot, there are significant problems besetting the efficiency of public goods provision under a one-man or oligarchic rule. The ideal "solution," once again, is a taxing scheme that equates marginal tax burdens to benefits for each individual. It is theoretically possible that in a given instance the despot could guess at such a scheme. More realistically, the problem of the efficiency-seeking despot is to somehow acquire knowledge of all his subjects' utility functions. In response to some system of questionnaires or polling, however, it remains in the self-interest of each individual to underreveal his demand for a public good in the hopes of reducing the tax burden imposed by the despot. (Actual voting, in which the results are in some sense binding on the executive, is conceptually excluded from a despotic system.) Even with perfect benevolence this problem of obtaining informa-

[28]Mancur Olson, *The Logic of Collective Action* (New York: Schocken Books, 1971).
[29]Anthony Downs, "An Economic Theory of Political Action in a Democracy," *Journal of Political Economy* 65, no. 2 (April 1957): 135–50.
[30]James Buchanan and Gordon Tullock, *The Calculus of Consent* (Ann Arbor: University of Michigan Press, 1965).

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tion would upset attempts to establish an efficient taxing scheme in the interests of the community. In the complete absence of benevolence, however, a despot would presumably act to distribute tax burdens in a manner that maximizes *his* own utility, subject to certain cost constraints (see section 3 below). The personal income-maximizing distribution of tax burdens bears no necessary, one-to-one relationship with the socially efficient, differential tax system; and history seems to support the assumption that despots exhibit significant utility *independence.*

The Free Rider as Hijacker

Unless one postulates some form of supernatural intervention into political decision-making processes, the only alternative to one-man or oligarchic rule is some form of non-despotic group decision-making. To obtain an efficient solution, the political mechanism must be designed to induce people to reveal their true wants. Insofar as the decision of a voter is potentially binding (i.e., costly), there is some implication that preferences revealed in a voting process approximate true preferences. In contrast to despotism, the theory of public finance associated with Wicksell, Lindahl, and, more recently, Samuelson, Buchanan, and others, postulates the voter-taxpayer as the basic decision-making unit. The voter is considered to be demanding marginal quantities of public goods whose prices are equivalent to the marginal taxes he must pay. Since it is through the voting process that tax burdens are decided, the voter is considered to levy these taxes upon himself. The size of the levy that a voter will choose is presumably equated with the marginal benefits he receives from the public goods. The apparent, although naive, conclusion to be drawn is that since marginal benefits are equated to marginal prices by voters in a political process in which they are allowed to choose tax schemes, efficiency conditions can be satisfied. In fact, Baumol asserts, the role of political voting is "that of assisting the members of the community to attain their own aims with maximum *efficiency*."[31]

To bring economic analysis to bear on political voting processes in a relatively short essay, it is necessary to simplify to a considerable degree. Nevertheless, we can ask in a general way whether and when an individual might indeed vote for an efficient taxing scheme and whether the decision process will actually result in such a scheme.

[31] Baumol, *Welfare Economics,* pp. 55–56. His discussion of voting immediately follows this quote.

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It should be obvious that, *ceteris paribus*, no rational (in the economic sense) man would choose to tax himself when it is possible for him to tax others for his own benefit. An individual would always choose the opportunity to free-ride over a system of efficient, differential tax-pricing. If no institutional (e.g., constitutional) restrictions are placed on the designated decision rule (e.g., numerical majority), the characteristics in the aggregate of a voting solution are evident. That group that is of sufficient size, as defined by the decision rule, to control a decision will impose costs on individuals in the losing group and lessen its own tax burden. *The political voting mechanism, then, provides a means by which individuals secure private benefits at the expense of others,* i.e., by which individuals can *create* externalities. In this light, it may be more proper to view coercive, collective political action as a means whereby some free riders are able to force others to pay for their rides, rather than as a means whereby we all agree to coerce ourselves in order to overcome a free-rider effect that frustrates desires for public goods. This notion and its implications for a positive theory of the state are more fully discussed below.

An individual in the group without control of the political mechanism must generally bear costs for which he is not compensated. It is possible that such an individual may support an efficient system of differential tax-pricing on grounds such as "fairness" if he has some degree of certainty that he will not be in the controlling group. "Fairness" might be viewed as a means by which such an individual could hope to reduce (through, perhaps, "guilt" costs) the positive benefit that members of the controlling group receive by transferring costs to the noncontrolling group. The success of such a tactic depends on the interdependence of utility functions. Given our assumptions about self-interest, we would expect to see a system of efficient tax-pricing only in the unlikely case that each individual (or at least a number sufficient to constitute a controlling group) acted in the way described here because he mistakenly believed himself to be in the noncontrolling group before the relevant vote was taken. Such a contrived case, arising as it does out of problems of imperfect knowledge, would generally be only a short-run equilibrium phenomenon.

The conclusion that the political process results in an inefficient tax-pricing scheme and externalities that arise out of the free-rider effect is hardly surprising or earth-shaking. It is reasonable to expect the characteristics of human beings that give rise to a free-rider effect to be independent of the particular types of institutions that can be used to produce a public good. If excluding nonpur-

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chasers of a public good is not economical, there is a benefit to demand distortion *and* to trying to get others to pay for the provision of the good. In the calculus of the individuals of the controlling group actually making a collective decision on the provision of a public good, private benefits will tend to exceed private costs.[32] The consequent inefficiencies in state provision of public goods seem to be as fundamental to the political mechanism as they are to the market mechanism, and thus we seem to have gone beyond the common criticisms of state provision of public goods, which emphasize the costliness of bureaucracies and the economies of information available through the market.[33] The inefficiencies of state provision are every bit as much a result of the "invisible hand" of the political process as the inefficiencies that result under the invisible hand of the marketplace. It does not appear that any institutional modifications for better government provide a remedy.

Altruism

The assumption that men are motivated solely by narrowly conceived self-interest is unrealistic. The fact that individuals do, to some degree, take into account the effects of their actions on others is borne out by both experience and introspection. If individuals were, on the other hand, so altruistic that they voluntarily internalized *all* the costs and benefits that their actions imposed on others and internalized these costs at the same marginal valuation as their "victims," then the ideal state of differential tax-pricing would be attainable. Regardless of the designated decision rule, no deliberate exploitation would occur. Each individual would select that tax that just equaled his marginal valuation of the public good. It is also true, however, that if total interdependence existed, no prescriptive conclusion could be derived from the theory of public goods. That is, no coercive action would be "necessary" since each individual would voluntarily pay a Demsetzian producer of a public good a price equal to his (the consumer's) marginal benefits. Exclusion costs would be zero. An assumption of perfect altruism thus defines away problems of demand revelation and the public goods "problem."

It is possible to postulate that individuals act in a self-interested manner in the market and altruistically within political systems—what can be called the idea of "bifurcated man."[34] If it were true

[32] James M. Buchanan, "Politics, Policy and Pigovian Margins." For a discussion of the "equilibrium" of this process, see Musgrave, *Theory of Public Finance*, p. 174.

[33] See for example Minasian, "Television Pricing."

[34] See James M. Buchanan, "Individual Choice in Voting and the Market," *Journal of*

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that the nature of individuals altered according to the institutional situations in which they found themselves, the ideal state would be attainable. However, the long record of governmental corruption, the history of political parties, and the well-known importance of lobby and pressure groups contradict this notion.

Thus far it has been assumed that the political choice process is not restricted by such means as a constitution, which might limit the coercive behavior of nonaltruistic individuals. At the "optimum,"[35] a constitution would decree that no individual may impose costs on another and that each must pay tax-prices for public goods equal to marginal benefits received. Unless one assumes that constitutions have an existence and an ability to enforce themselves independent of human beings, however, constitutions and "paper" restrictions offer no solution to the problem of efficiently providing public goods through the state. A legalistic decree is only as forceful as the individuals charged with enforcing it. Although a constitution may create some marginal costs for the controlling group, our analysis of political action indicates that the optimum constitution is inherently unstable insofar as, at any time, it is in the interest of the most powerful group to alter the decree. It is also true that a decree that "tax-pricing shall be efficient" says nothing about the practical problem of demand revelation, which is the central issue in the public goods problem. Furthermore, as will be discussed below in connection with generalized theories of the state and its origin, the adoption of an optimum constitution is virtually inconceivable in a world of self-interested decisions.

The Unanimity Rule

A special kind of group decision enables the economist to conclude that, in the aggregate, the marginal social costs of a group action do not exceed the marginal social benefits and that, for each individual, the marginal private costs do not exceed the marginal private benefits. When a decision is unanimous—assuming that each individual knows his preferences—the axioms of utility theory imply that each individual prefers the agreed-upon action. The unanimity rule in group decisions satisfies the conditions of Pareto-optimality. It was on these grounds that Knut Wicksell earned considerable notoriety in the late nineteenth century for his serious advocacy of the unanimity rule as the only acceptable rule for political action and public finance.

Political Economy 62 (1954): 334–63, for a full treatment of this subject.

[35] For a discussion of the optimal constitution, see Buchanan, "Politics, Policy," p. 179.

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If our welfare economics is to be rigorous, it is important to note that approximations of unanimity are not adequate substitutes for unanimity itself. In the presence of political coercion and the corresponding absence of both unanimity and voluntarily revealed preferences, it cannot be concluded that coerced individuals realize gains in satisfaction. Given the impossibility of interpersonal comparisons of utility and the untenability of the "equal capacities of satisfaction" assumption, it is, then, impossible to draw any conclusions concerning effects on social welfare when decisions are not unanimous (unless all "losers" are *actually* compensated for their losses).[36]

Although the efficiency and optimality implications of unanimity in group choice are generally recognized, recent work has been concerned with the impracticability (i.e., the prohibitive costs) of a unanimous-decision rule. Both Olson's *The Logic of Collective Action*[37] and Buchanan and Tullock's *The Calculus of Consent*,[38] for example, view the state primarily as a producer of public goods for large groups and stress that the practicability of reaching unanimity is inversely related to the size of the group. The high costs of communications among members of a large group, as well as the free-rider effect and the probability of abstention from a unanimous-decision rule, have led to its rejection as a rule of public choice.

It is worth pointing out that unanimity is not, strictly speaking, a mode of political action. At its logical extreme, unanimity means total voluntarism. The voluntary entry into agreement and the formation, thereby, of a group is tautologically descriptive of a private, market process. In other words, political action involves some element of coercion. In *The Logic of Collective Action*, Olson expresses this point in his criticisms of Wicksell. Olson argues that since a totally unanimous decision is a private decision, consistent adherence to the unanimity rule can only lead one to oppose all state action.[39]

There is a further interesting implication in the conclusion that the unanimity rule is nonpolitical. Although there is widespread recognition that individuals use the political process for personal gain in certain obvious instances, it is fair to say that most economists implicitly or explicitly accept the idea of some initial

[36] If all losers are actually compensated according to their revealed valuations in all "nonunanimous" actions, then, in fact, such actions *are* unanimous and private.

[37] Olson, *The Logic*. See especially pp. 5–52 and 98–110.

[38] Buchanan and Tullock, *The Calculus*. See especially pp. 85–96.

[39] Olson, *The Logic*, pp. 90, 93.

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unanimity in the formation of the state.[40] That is, it is a widely accepted view that individuals agree to coerce themselves in undertaking collective, state activity to overcome collective problems. This approach makes it conceptually possible to overcome the inherent pressures for inefficiency and the "anti-Pareto" welfare implications found in the political provision of public goods. Insofar as this approach rests on an assumption of initial unanimity it is most properly viewed as the basis for a theory of clubs – clubs that individuals voluntarily agree to join, contractually binding themselves to abide by decision rules and decisions and to pay certain fees that the club decides on, etc. As a basis for a positive economic theory of the state, however, "original unanimity" is both historically (i.e., empirically) and theoretically questionable. We turn now to a more explicit analysis of economic explanations for the existence of the state.

3. The Public Goods Theory of the State

The theory of public goods has served not only as the basis for prescriptive policy conclusions, but also as the foundation of a widely accepted, more general theory of the nontotalitarian state. According to what can be called the "public goods" theory of the state, there are certain ends (exhibiting jointness attributes) that all men desire collectively but which are frustrated by the independent actions of each person acting in his individual interest. In such situations, men agree to coerce themselves in order to eliminate the free-rider effect and satisfy their collective ends. The institution created by their agreement, and the vehicle of mutual coercion, is government. As Baumol writes, because of the existence of public goods "it is only through coercion (the existence of government) that the ideal can be maintained. The essence of *democratic government may then be the voluntary acceptance of a central agency of intimidation* designed for the attainment of the desires of the public."[41]

It is not unfair to say that this statement expresses the most widely accepted economic theory of the origin of the state. It is accepted almost universally among modern public finance and public goods theorists, including Baumol, Bowen, and Samuelson. The public goods theory of the state was also accepted by such historically significant figures as John Stuart Mill, David Hume, and Adam Smith.[42] Even economists such as Musgrave, Olson, Buchanan

[40] Buchanan and Tullock, *The Calculus*, pp. 14–15.

[41] Baumol, *Welfare Economics*, p. 57.

[42] Ibid., p. 159 on Hume, pp. 189–92 on Mill, and pp. 184–86 on Smith.

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(before an apparent change of heart),[43] and Tullock, who have recognized the external effects resulting from the shifting of private costs through a system of political decision-making, tend to view such consequences as aberrations of an institution otherwise collectively formed for the purpose of satisfying collective desires and eliminating market imperfections. As Olson has written in *The Logic of Collective Action:*

> Most economists accept a theory which implies that the basic services of government can be provided . . . only through compulsion. This is the theory of "public goods." Most economists have accordingly accepted the basic premise . . . that organizations work for a common benefit – in the case of one special type of organization, the state. The idea that the state provides a common benefit, or works for the general welfare, goes back more than a century.[44]

Just as the utility-maximizing individual has served as the paradigm by which analysis is structured in microeconomics, the public goods theory of the state has served as the paradigm by which economists have structured their analysis of government.

The public goods theory of the state contains a self-defeating paradox. The theory implies and accepts a consensus at the level of constitutional choice, i.e., government formation – a consensus that approaches unanimity at the ideal limit. Only at this limit can it be said that an organization with coercive powers acts for a common good. The paradox of the public goods theory of the state lies in the fact that, as Olson has pointed out: (1) an organization designed for the purpose of providing public goods has "publicness" characteristics itself;[45] and (2) the importance of a free-rider effect increases as the size of the relevant group increases because the marginal effect of the contribution of any single individual diminishes with increases in group size and any private costs (e.g., public goods not produced) associated with free riding are correspondingly reduced.[46]

Certainly, governments typically satisfy Olson's "large group" criteria. It is true also that the "production" of the ideal state, which actually produces public goods, has elements of publicness itself – those individuals who do not consent to join would, for example, receive benefits from any defense services, disease prevention,

[43] James M. Buchanan, "Before Public Choice," in *Explorations in the Theory of Anarchy*, ed. Gordon Tullock (Blacksburg, Va.: Center for Study of Public Choice, Virginia Polytechnic Institute, 1972), pp. 27–37.

[44] Olson, *The Logic*, p. 98.

[45] Ibid., pp. 15, 5–52.

[46] Ibid., p. 35.

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etc., that are produced. There is thus an incentive for each individual to avoid the costs (such as tax-prices) of joining the state in the hopes that other individuals join. ("Joining" would be defined as "voluntary acceptance of a central agency of intimidation.")[47] If the conclusion of the public goods theory of the state is that government compulsion is necessary to overcome the free-rider effect associated with the "production" of the state, then the theory implies the necessity of some preexisting state as a means of producing *the* state. The obvious implication is an infinite series of preexisting states. If the test of a theory is not only the validity of its empirical predictions but also its logical consistency (without which empirical propositions are not forthcoming), the public goods theory of the state fails to pass both tests.

A consistent economic analysis leads to a vastly different conception of the state than that found in this public goods theory of the state. The alternative to the paradox of the "general welfare" public goods theory of the state is a theory founded on some notion of initial and continuing coercion (or conquest) for the service of private interests. Unless one postulates either a "bifurcated" man, a total altruistic interdependence among utility functions, original unanimity, or states that have existences, interests, and the ability to act independent of individual human beings, it is difficult to accept the idea that states (i.e., *non*unanimously organized groups of individuals) are designed for service to the general welfare. The postulates on which such a conception of the state could be based are unrealistic and methodologically inconsistent with all other phases of economic analysis. If individuals act in their own interests, then the state can be conceived of only as *an organization by which individuals promote their private interests through involuntary, ultimately violent, i.e., nonmarket, means.* We suggest that this should be the methodological paradigm for a positive economic theory of the state.

Lest this statement of the basis for an involuntary theory of the state appear too strong, it is worth stressing that its implications are solely methodological; and it is "too strong" only in the same sense that the paradigm of the profit-maximizing firm is too strong.

Our purpose at this stage is essentially a negative one—to dethrone a methodologically unsound paradigm on which a theory is built. In so doing, we are by implication suggesting an alternative paradigm. The implications and ramifications of a full-blown involuntary theory of the state, however, are far beyond the scope of

[47] Baumol, *Welfare Economics*, p. 57.

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anything short of a long book. The most that can be done here is to provide a general framework of analysis that can be subsequently applied to particular policies.

As we have seen, given standard, realistic assumptions, the individuals who effectively are the state at any time would not be expected to act to promote a general public interest in efficient resource allocation. Rather, other things equal, controlling individuals would act to promote their own welfare at the expense of noncontrolling individuals. These conclusions hold even in a world of somewhat, albeit not perfectly, altruistic individuals. A controlling group, A, of such individuals might seek to transfer wealth to group B; but the extent of such transfers could be expected to vary inversely with their cost to A and positively with the ability of A to finance them through extractions from groups C, D, and so on. In general, even the loftiest of goals will be pursued more intensely when its proponents can impose the costs of pursuit on someone else, and the coercive powers of government provide tried-and-tested means of doing this.

The core of an involuntary theory of the state is the refutable proposition that utility-maximizing individuals will generally be willing to use coercive means to achieve their objectives when they have the opportunity to do so. Application of the sobriquet "government" should not be expected to make individuals totally unwilling to behave in this fashion, as the overwhelming record of political history testifies. Stated in these terms, a paradigm of involuntarism would hardly seem controversial, notwithstanding the widespread acceptance of the nonchoice-theoretic, high-school-civics-class foundation of the public goods theory of the state. Indeed, the more challenging element of an involuntary theory of government is to identify the conditions and constraints that limit and shape the forms by which the individuals who are the state promote their interests.

One source of constraints may be competition. Under democratic decision rules or in the absence of migration restrictions, competition between individuals seeking to become the government (as described by Downs)[48] or competition between governments (as described by Tiebout)[49] can be expected to counteract the deleterious impact that utility maximization by controlling individuals can have on both other individuals and the efficiency of resource

[48]Downs, "An Economic Theory."

[49]Charles M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64, no. 5 (October 1956): 416–24.

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allocation. A number of considerations, however, suggest that the conditions that make competition in the marketplace such a socially productive force are unlikely to be so prevalent in the political sector.

In the nondemocratic case, the essence of despotic rule is its monopolistic character—and such rule is all too common. Of course, even in the absence of competition, a monopolistic, wealth-expropriating government has incentives to pursue its objectives with minimal distortion to economic efficiency. Efficiency promotes maximization of the sources of gain for despotic rulers. The incentives to minimize distortions to efficiency may entail the production of goods that have attributes of publicness (for example, national defense). Unless one adheres to the naive assumption of complete altruism, however, it could not be argued that such governmental provision of public goods is the purpose or raison d'être of that government. Moreover, the weight of evidence clearly indicates that the economic performance of despotic decision-making has been poor to the extent that the information/coordination economies of market mechanisms have been eschewed and the negative incentive effects of governmental expropriation have been unrestrained.

Forms of nondespotic, democratic political decision-making generally provide relatively greater scope for competition. The salutary consequences that might result from this competition, however, are limited by the inherently nonmarket nature of decisions made under democratic rule. Specifically, competition in the private marketplace guides Adam Smith's invisible hand most effectively when, as Hayek has stressed,[50] a continuously operating market allows repeated marginal adjustments in the behavior of buyers and sellers and produces a steady stream of relatively cheap information on such behavior. The political "marketplace," however, meets relatively rarely; when it does voters are presented with a bundle of numerous and durable choices that cannot be marginally altered. Moreover, political competition is plagued by high transaction costs; the costs of organizing and promoting changes in the bundle of policies offered by the government are substantial. Indeed, these costs are high relative to the transaction costs typically encountered in the private market because voters' incentives for participation and acquisition of information are blunted both by their inability to register effectively the intensity of their demands

[50] Friedrich A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35, no. 4 (September 1945): 519–30.

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directly with their dollars and, as noted above, the inherent public good attributes of collective political decisions.

Even in the absence of the costs and discontinuities that plague democratic decision rules, competition for control of the state under such rules could be expected to be imperfect. The common domination of a small number (usually two) of political parties suggests oligopolistic opportunities to collude implicitly or explicitly so as to maximize jointly the returns to power. Moreover, the individual power seekers who might, under the pressure of competition, offer voters less expropriation are to some extent the enforcers of the bargains implicitly struck with voters; and the provision of such enforcement is unlikely to be characterized by perfect competition. As Hirshleifer and Buchanan have pointed out,[51] the individuals who are the government at any moment do not have to take the rules and institutions of the political process as exogenously given. The competition to provide and enforce such rules and institutions is ultimately taking place in a Hobbesian world governed only by a "law of the jungle" that does not even define property rights or constitutional rules, much less recognize them. If nothing else, the inequality of initial endowments of wealth and power in this context suggests imperfect competition.

The involuntarist theory of government suggests that the individuals who are the state can realize benefits (from use of their ability to coerce others) to the degree that political competition is reduced. In practice, this means that the more the power of the state is used by the controlling group to promote its welfare at the expense of outsiders, the lower is the probability attached by the controlling group to the possibility that it will be removed from power – either forcibly or democratically – by competitors. It would seem rational for controlling individuals to somewhat restrict the severity of their exactions in the present in order both to ensure the availability of future income sources and to protect themselves against the possibility that they will be subject to severe expropriations themselves if they should lose control of the state at a future time. In general, administrative costs and the costs associated with some probability of resistance or revolt will limit state action. Coercion is a resource-using and, therefore, expensive activity for the controlling group.

The involuntarist paradigm may go considerably further than the public-goods, "we-all-agree-to-coerce-ourselves" theory of the state

[51] See Jack Hirshleifer, "Comment," *Journal of Law and Economics* 19, no. 2 (August 1976): 241–44; and Buchanan, "Before Public Choice."

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in explaining an exceedingly common and, in terms of its use of resources, important form of state activity. In particular, the public goods theory of government provides no explanation for the innumerable instances of state aggression through, most notably, military action. From an involuntarist perspective, it is quite reasonable to expect controlling individuals to increase available sources of income by bringing more people and property under control through conquest or co-optation. By the same token, controlling individuals could be expected to restrict the ability of controlled individuals to escape the control of the state. Alternatively, a controlling group might desire to exclude some individuals when such factors as differences in language or culture make the costs of control larger than the expected gains to the state. Such restrictions on both in- and out-migration are, of course, common to the modern period of nation-states.

Finally, an involuntarist theory of government may provide insight into the popularity of the public goods theory of government. Given that noncontrolling individuals, acting in their own interests, will act (resist or rebel) to minimize their shares of the costs of state action, there is some incentive for the state to invest in efforts to convince noncontrolling individuals that the state operates efficiently and for the common good. That is, there is a positive incentive for the state to promote acceptance of the public goods theory of the state. The production of propaganda with this content is a common state activity.

Conclusion

Notwithstanding the difficulty that any analyst, myself included, encounters in trying to address the matters at hand without using loaded terms, no normative conclusions can be drawn from the analysis of this study. Merely to show that there are divergences between private and social interests, which give rise to inefficiencies in political activity, is not to imply that any alternative would necessarily produce better results. The message of this study is only that the attributes of behavior and the world that gives rise to problems of optimal resource allocation are independent of institutions. They can not be assumed or asserted away, as the public goods theory of the state attempts to do. If individuals can get away without paying for something, either by free-riding when the market system tries to provide a public good or by forcing others to pay through governmental coercion, they can generally be expected to do so. Thus, relative to some ideal Nirvana, the public goods phenomenon can be expected to result in problems of inefficient

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resource allocation under both market and state provision – for precisely the same reasons in each case.

The battle among *wertfrei* scientists over the role of the state in human activity is sometimes far from a dispassionate struggle for truth. Further application of economic theory to political mechanisms is necessary and will, it is hoped, act to eliminate prejudice and emotion from the debate over what is probably *the* question of modern civilization. This debate can only be as fruitful as our analytic models are realistic.

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BUREAUCRATIC INCENTIVES, SOCIAL EFFICIENCY, AND THE CONFLICT IN FEDERAL LAND POLICY

Mack Ott

Introduction

Economic analyses of bureaucracy have charged that public production tends to be more costly than optimal;[1] the extra cost may be due to either technological or allocational inefficiency.[2] Conversely, the standard theory of regulation asserts that regulated industries produce too little and, behind barriers to entry, obtain monopoly rents on their suboptimal output levels;[3] Stigler and Posner have

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The author is Associate Professor of Economics at The Pennsylvania State University, University Park 16802.

[1] See Armen A. Alchian, "Private Property and the Relative Cost of Tenure," in *The Public Stake in Union Power,* ed. Philip D. Bradley (Charlottesville, Va.: The University Press of Virginia, 1958), reprinted in Armen A. Alchian, *Economic Forces at Work* (Indianapolis, Ind.: Liberty Press, 1977), pp. 177–202; Louis DeAllessi, "Implications of Property Rights for Government Employees," *American Economic Review,* March 1969, pp. 13–24; William A. Niskanen, *Bureaucracy and Representative Government* (New York): Aldine-Atherton, 1971); idem, "Bureaucrats and Politicians," *Journal of Law and Economics,* December 1975, pp. 617–43; Jean-Luc Migue and Gerard Belanger, "Toward a General Theory of Managerial Discretion," *Public Choice,* Spring 1974, pp. 27–43; and Mack Ott, "Bureaucracy, Monopoly, and the Demand for Municipal Services," *Journal of Urban Economics,* November 1980, pp. 362–82.

[2] *Technological* inefficiency is waste in the everyday sense; that is, the same output could be produced with fewer inputs. *Allocational* inefficiency occurs if the least desired units of output have a smaller value than some alternative uses of their inputs; the common expression "too much of a good thing" captures this idea.

[3] See George T. Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science,* Spring 1971, pp. 3–21; idem, "Free Riders and Collective Action: An Appendix to Theories of Economic Regulation," *Bell Journal of Economics and Management Science,* Autumn 1974, pp. 359–65; and Richard A. Posner, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science,* Autumn 1974, pp. 335–58.

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also argued that regulated industries tend to capture their regulatory agencies so that policies are made on behalf of the industries rather than to promote the commonweal.[4] Both of these hypotheses are based on the premise that decision makers, whether in private firms or in public agencies, are wealth maximizers and that nonoptimal decisions made by the public officials are a result of inappropriate incentives. In particular, while private wealth maximization efficiently allocates resources in the private sector through profit seeking, in the public sector it leads to inefficient overproduction through budget seeking.[5] However, if these hypotheses are implied by a consistent theory of bureaucratic behavior, why is it that public production may be too large and yet publicly regulated private production too small?

In this paper we examine the incentives governing bureaucratic decision-making and the extent to which agency information advantages relative to their nominal superiors preclude cost-effective management. First, a model of bureaucratic behavior developed in my "Bureaucracy, Monopoly, and the Demand for Municipal Services" is extended to the case of regulation. Then the model is adapted to the case of public land use regulation and used to demonstrate the existence of incentives to stifle private commercial activities on public federal lands whether or not such production is

[4]Stigler, "Theory of Economic Regulation"; Posner, "Theories of Economic Regulation," pp. 340ff.

[5]This assumes a competitive market for both factors of production and outputs. If producers can gain wealth by allocating resources toward *obtaining* a monopoly, any resources so used would produce no social value and would constitute a social loss; this sort of wasteful competition has been dubbed "rent-seeking" by Gordon Tullock ("The Welfare Costs of Tariffs, Monopolies, and Theft," *Western Economic Journal,* June 1967, pp. 224–32). Following this line of reasoning, Posner ("The Social Costs of Monopoly and Regulation," *Journal of Political Economy,* August 1975, pp. 807–27) has reassessed the social costs of monopoly to include not only the higher prices and reduced output of the monopolist, but also any resources monopolists have allocated to obtain or to retain their positions. Jack Hirshleifer ("The Private and Social Value of Information and the Reward to Inventive Activity," *American Economic Review,* September 1971, pp. 561–74) has argued that some inventive activity may also be socially wasteful for the same reason—e.g., research done to obtain a patent on which monopoly rents will be received, when the research would not have been undertaken if there were no possibility of obtaining the patent. In this paper we shall not address the rent-seeking issue—that is, the public resources used in lobbying to *acquire* land; our focus will be on how land already in the public domain is allocated to commercial and multiple uses vs. exclusive wilderness use. However, that rent-seeking behavior is entailed in public land acquisition was the finding of the U.S. General Accounting Office in its recent study, *The Federal Drive to Acquire Private Lands Should Be Reassessed* [CED-80-14] (Washington, D.C.: Government Printing Office, December 14, 1979).

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competitive with other land uses. To this extent the model generates a solution to Posner's puzzle concerning "public interest rhetoric" in public policy decisions:

> An important, but as yet unexplained, datum is the characteristic public interest rhetoric in which discussions of public policy are conducted and the policies themselves framed. The use of language that, if the economic theory of regulation is correct, is utterly uninformative and indeed misleading is not costless; presumably it is employed only because there are offsetting benefits. These benefits must have to do with increasing the costs to members of the public of obtaining accurate information about the effect of the actions of their legislative representatives on their welfare.[6]

As we shall see, regulatory capture need not be by a regulated industry, but, consistent with the Stigler-Posner theory, may be by a sociopolitical interest group, in this case environmental activists. Since such groups compete with the regulated industries for resources held in the public trust, the interest group should be seen as a regulatee along with the industries. The conclusion proposes a policy for diminishing the information advantage of the agency and the extent to which this advantage can inappropriately benefit the agency at the expense of the commonweal.

Bureaucratic Budget Maximization

Managers of public enterprises – e.g., municipal fire departments, public hospitals, the Department of the Interior – have incentive structures much different from their private counterparts. In a private firm the owners create incentives for managers to maximize the difference between revenues and private costs.[7] Since the private manager has some contingent property rights in the revenue-minus-cost residual, he makes choices that tend to maximize the firm's and its owners' net worth. While Baumol, Williamson, and others have argued that the separation of ownership and control in the modern corporation has diluted profit-

[6] Posner, "Theories of Economic Regulation," p. 355.

[7] Note that both private and public enterprises have incentives to ignore public costs (externalities) to the extent either that such costs are not internalized, or, equivalently, that their avoidance is not specified in the enterprises' constraints. Examples in the private sector are industries that emit pollutants or dispose of hazardous wastes with little heed to their environmental consequences; in the public sector OSHA regulators may ignore the negative impacts of employment in setting safety standards, and the Army Corps of Engineers may propose and build flood control systems giving little attention to the alternatives or the displacement costs to individuals in the dam site.

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seeking incentives,[8] empirical research has strongly refuted such characterizations.[9] Uniformly, investigations of the management compensation and firm performance relation in the private sector have found strong evidence of the effectiveness of management compensation schemes in inducing the maximization of the firm's net worth, which is presumably the owners' maximand.

Conversely, in the public sector there is no residual claimant: The public agency's budget must be exhausted by approved expenditures. If there is a surplus, it is remanded to the general fund and will usually result in a reduction of the agency's subsequent budgets. Since a surplus cannot benefit the agency, there can be no direct benefit to the agency of increasing a benefit-cost difference or of reducing the cost of achieving a given benefit level. Thus, broadly speaking, bureaucrats have strong incentives to increase costs, as these will, up to a point, increase the size of the bureau's budget. This budget augmentation can be accomplished in one or both of two ways: (1) by understating the marginal cost of the bureau's output; (2) by price discrimination.

If we assume that managers of public agencies are wealth maximizers to the same extent as managers of private firms, then their behavior—i.e., their budgeting decisions, their planning, and their production—can be understood in terms of the reward structure under which they function.[10] The pecuniary compensation of civil service managers is determined, somewhat rigidly and quite uniformly, by the number and grade of people whom they supervise; thus there is a strong incentive for bureaucrats at each level in an agency to increase the number of employees in their sections. By so doing, their operating budgets and salaries will be enlarged. Clearly, subordinates who point out the need for more personnel would

[8]See William J. Baumol, *Business Behavior, Value and Growth,* rev. ed. (New York: Harcourt, Brace & World, 1967); and Oliver E. Williamson, *The Economics of Discretionary Behavior: Managerial Objectives in a Theory of the Firm* (Englewood Cliffs, N.J.: Prentice-Hall, 1964).

[9]E.g., Robert T. Masson, "Executive Motivations, Earnings and Consequent Equity Performance," *Journal of Political Economy,* November/December 1971, pp. 1278-92; Wilbur G. Lewellen, *The Ownership Income of Management* (New York: Columbia University Press, 1971); and David H. Ciesel and Thomas M. Carrol, "The Determinants of Executive Salaries: An Econometric Survey," *Review of Economics and Statistics,* February 1980, pp. 7-13.

[10]Note that public agency managers may have preferences for the particular characteristics of their professional activity (i.e., obtain psychic income) the same as some private firm managers *enjoy* being restaurant supervisors while others *enjoy* being accountants. All that is encompassed in our assumption is that, other things the same, public managers would prefer more pecuniary income to less.

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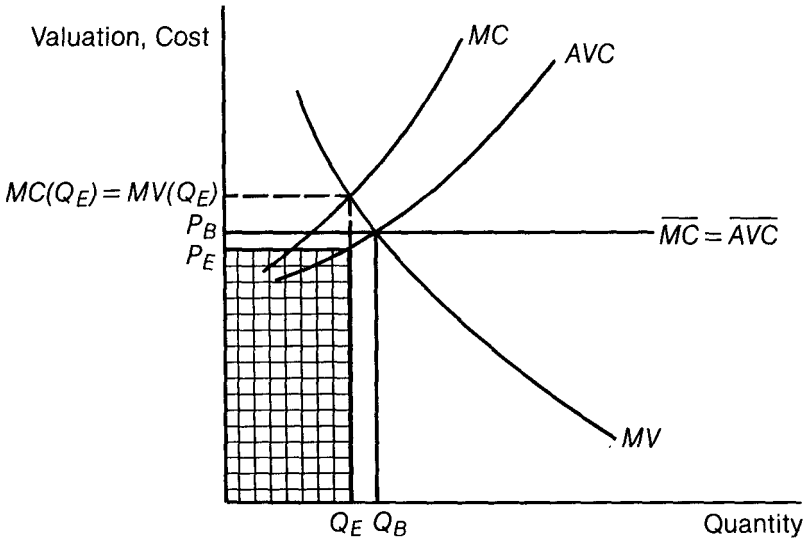
FIGURE 1
BUREAUCRAT'S BUDGET IS LARGER IF *AVC* IS CONSTANT (P_BQ_B) THAN IF *MC* IS RISING (P_EQ_E) IN REGION OF CHOICE



be acting in the interest of and would be supported by their superiors.

The bureaucrat's decision problem is, therefore, to present the largest budget that his political executive – the mayor, the governor, or the cabinet secretary – would approve. This entails knowing the executive's demand for the agency's output as well as knowing the agency's own cost function. Knowledge of the latter is a qualification for management and comes from the seniority characteristic of civil servants who head agencies. Knowledge of the former is obtained as a result of the political process. A political candidate reveals his preferences both explicitly in his campaign platform and implicitly by embodying the preferences of those voter and special-interest groups who support him. Since department heads and cabinet secretaries are appointees of the elected politician, these political executives may, in turn, be presumed to reflect the preferences of the politician.

The bureaucrat's problem is presented graphically in figure 1. The executive's demand is depicted by his marginal valuation curve *MV*, i.e., the value he puts on the last unit of output. The bureau's cost function is represented by its marginal cost curve *MC*, i.e., the cost of producing the last unit of output. Social efficiency implies the equating of *MV* and *MC* so that Q_E units should be produced. Since, in general, marginal cost is rising as in figure 1, average

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variable cost, AVC, will be less than marginal cost. That is, unit price (P_E) is less than marginal cost $MC(Q_E)$. Hence, to produce Q_E units would require a budget represented by the cross-hatched rectangle P_EQ_E.

Here is where the bureaucrat's incentives for his own, private wealth maximization operate at cross-purposes with social efficiency. Since the bureaucrat obtains benefit from enlarging his budget but obtains no benefit from the *difference between* unit cost, AVC, and marginal value, MV (in contrast to his counterpart managing a private firm), there is an incentive to try to expand production to Q_B where AVC *equals* MV. This can be accomplished, if the executive does not know the bureau's cost function, by claiming constant costs (i.e., $MC = AVC$) for all levels of output. For example, a department head would obtain a larger budget from the executive, his mayor, if the proposed output/unit-price pair were claimed to be in a region of constant average variable (and marginal) costs; see $\overline{MC} = \overline{AVC}$ in figure 1. That is, the quantity Q_B with a unit price (equal to its average cost) P_B yields a larger budget P_BQ_B than P_EQ_E.

Since the marginal cost of Q_B, MC_B, clearly exceeds its marginal value, no fully informed political executive would grant the budget P_BQ_B. Equivalently, but more provocatively, if the executive knew the bureau's cost function, he would make the efficient choice, Q_E. But, as Niskanen observed in his *Bureaucracy and Representative Government:*

> The bureau has no incentive to be efficient; on the contrary, it should be expected *to seek out expenditures beyond those minimally required* in order to exhaust the approved budget. A careful cost-effectiveness analysis would indicate that the same output could be achieved at a lower budget, but the analyst should expect no cooperation from the bureau, as it has no incentive *either to know or to reveal its minimum cost function.*[11]

The bureau will conceal its cost function in order to exploit the executive; however, contrary to Niskanen, it must know its cost function to do so. Furthermore, rather than overstating its costs, it will understate its marginal costs in order to obtain a larger budget, as shown in figure 1.[12]

[11] Niskanen, *Bureaucracy and Representative Government,* p. 48. Italics added.

[12] Notice that both Niskanen and Posner have indicated that bureaucrats have an incentive and ability to withhold information in order to obtain larger budgets. Niskanen (*Bureaucracy and Representative Government*, p. 48) and Migue and Belanger ("Toward a General Theory of Managerial Discretion," p. 32) both assume a passive executive whose knowing the cost function does not suffice to avoid the exploitation; Posner ("Theories of Economic Regulation," pp. 355–56), in contrast, argues

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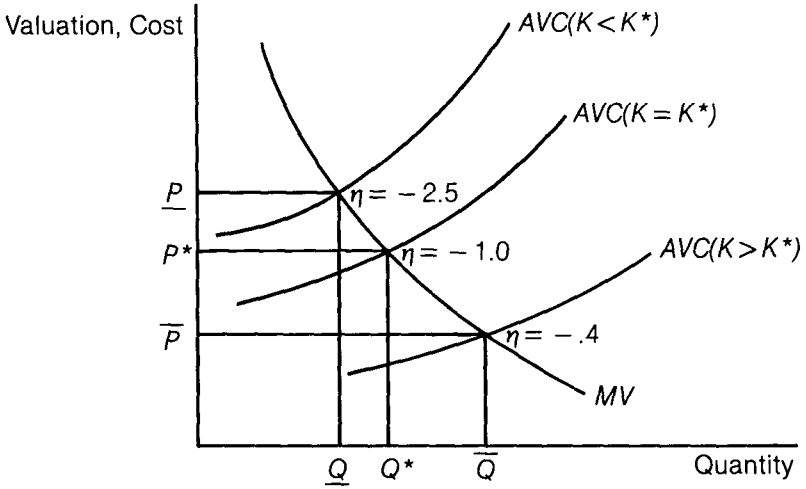
FIGURE 2
BUREAUCRAT'S OPTIMAL CAPITAL STOCK, K^*, LOCATES INTERSECTION OF *AVC* AND *MV* AT UNITARY PRICE ELASTICITY



The bureaucrat's solution to the budget problem in figure 1 is only its short-run optimum. By changing its capital stock through budget requests, it can raise or lower its cost function. The long-run solution entails manipulating the bureau's capital stock until, by increasing (decreasing) its productivity with the larger (smaller) capital stock, the average variable cost curve, *AVC*, passes through the unit-elastic point of the executive's marginal valuation curve—see figure 2—where the largest budget, the PQ rectangle, will be obtained. At the budget-maximizing capital stock, K^*, the maximal budget, P^*Q^*, is obtained. Once again, as in the short-run solution shown in figure 1, Q^* is inefficiently large since the rising $AVC(K^*)$ implies a marginal cost at Q^* that exceeds its marginal value, a fact concealed from the executive by the bureaucrat's claim of constant average costs at Q^*.[13]

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that the time cost of information to the bureaucrats' superiors precludes adequate supervision given the bureau's natural information advantage. Earl Thompson ("Book Review—Niskanen's *Bureaucracy and Representative Government*," *Journal of Economic Literature*, September 1973, pp. 950–53) raises this as a criticism of Niskanen's book—i.e., the executive chooses the quantity of output and the bureau's budget—so that bureaucratic power inheres in its information advantage. Ott ("Bureaucracy, Monopoly," p. 367) assumes that it is the relative information advantage of the bureaucrat concerning his bureau's cost function that explains how the nominally subordinate bureaucrat can take advantage of his superior executive.

[13]The capital stock relevant to the bureau depends on its function—e.g., fire trucks and alarm systems for a fire department; acres of land to be managed for the forest

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The particular form that the cost understatement takes varies depending on the budget augmentation accruing therefrom to the bureau. In some cases, as in municipal services, it would profit the bureau to understate its marginal costs. In other cases, as in the regulatory agencies, it would benefit the bureau to understate or to ignore the social costs of its actions and focus on an identifiable, but incomplete, cost of its regulatory restrictions. Since the agency is likely to be the primary repository of expertise on the regulated activity under the current government organization, it is likely to know its costs, both private and social, better than the executive branch.[14] In all cases, however, the budgeted output—demanded by the executive and promised by the bureau—must be neither overproduced nor, equivalently, produced with less than the budgeted expenditure.

The second method of budget augmentation is price discrimination. Price discrimination, selling the same product at different prices, is rife in any market economy; consider quantity discounts, age-dependent admission prices, paperback vs. hardcover book price differentials, credit cards,[15] tie-in sales, student athletic tickets, etc.[16] Some price discrimination may actually reflect econ-

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service plus the equipment to manage it; airplanes, ships, and geographical areas of responsibility for the navy. Note that the quantity of land managed by a particular agency of the Department of the Interior or Agriculture is an obvious capital input into its service output—any change in the agency's jurisdiction implying changes in the productivity of additional employees and, therefore, in the agency's operating budget.

[14]The restricted industry may be a source of opposition expertise on social costs, but its effectiveness can be diluted by characterizations of its motives as profit-seeking, selfish, and narrow; in contrast, as Posner observed (page 587, above), the bureau will present itself and its analysis as objective, disinterested, and thorough. While such a mask has been effective in the past, the General Accounting Office of the U.S. comptroller general has, in recent years, become a useful source of objective analysis. John Baden and Rodney D. Fort ("National Resources and Bureaucratic Predators," *Policy Review*, Winter 1980, pp. 169–81) have argued for a predatory auditing agency, i.e., one whose budget is essentially from bounties for ferreting out waste and bureaucratic mismanagement. In a sense, the GAO comes remarkably close to such an arrangement in that its budget depends somewhat upon congressional requests for research that, in turn, are induced by the GAO staff's success in uncovering waste and mismanagement.

[15]Michael M. Murphy and Mack Ott, "Retail Credit, Credit Cards, and Price Discrimination," *Southern Economic Journal*, January 1977, pp. 1303–12.

[16]Note that price discrimination may exist where products are different—e.g., paperback vs. hardback books—if the differences in their costs of production are less than the price differences; that price discrimination may exist where prices are apparently the same—e.g., credit vs. noncredit—if the costs of serving are different; and that some price differences reflecting different costs of serving—e.g., quantity discounts—may be efficient though discriminatory.

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omies of scale or other production-cost reductions – e.g., long- vs. short-term parking rates or certain quantity discounts – but all result from the seller's knowledge of the buyer's demand curve. In order to maintain the multiple prices, the seller must somehow separate buyers with different demand elasticities or, in the case of sequential price discrimination, induce the purchase of the earlier units at a higher price than the later units.[17] One means of sequentially separating units to facilitate price discrimination is to claim uniqueness. If each unit *is* different, then although each is produced by the same process with the same inputs, the executive-client may not be able to administratively impose the appropriate, lower budget. A related tactic to avoid budget reductions is to arrange the sequence of activities so that the most desired ones are at the margin. A form of this tactic has been used by politicians and bureaucrats opposing state and local tax reduction propositions in recent years.

In summary, budget augmentation operates in the bureau through either cost understatement or price discrimination or both. Applying this model to federal land use regulation entails some apparent problems: Not only is the quantification of output troublesome, but the model of pure cost concealment will not suffice since both marginal cost understatement and price discrimination are at work. However, a straightforward generalization of the cost concealment model can be constructed to cover both.

Bureaucracy and the Restrictions on Federal Land Use

The Departments of the Interior and Agriculture are responsible for managing federally owned lands in a manner that accommodates both development and preservation.[18] Since these uses are often seen as incompatible, choices are necessitated that will inevitably displease some interest group. Furthermore, the allocation of land to a special use, say wilderness preservation or mineral exploration, increases the budget of the agency responsible for that

[17] A simple form of price discrimination is the all-or-nothing type, which is a special case of the more general tie-in-sale discrimination. (See Nisknanen, *Bureaucracy and Representative Government*, p. 48.) However, the difficulty in applying this to analysis of bureaucracy is that it requires that the bureau be able to impose its decision on the bureaucrat. This clearly will not work in the case of services, e.g., police or municipal parks; however, in the case of regulatory agencies, court orders may impose the quantity restriction on the executive, and the agency may have been involved in the arguments presented to the court – e.g., pollution abatement and land restrictions.

[18] U.S. General Accounting Office, *Land Use Issues* [CED-80-108] (Washington, D.C.: Government Printing Office, June 27, 1980), pp. 8–9.

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activity. Hence bureaucratic assessments should not be expected to be strictly objective.

The management of federal lands is a responsibility of enormous magnitude and complexity. Of the 2.27 billion acres making up the U.S. land area, about 760 million are owned by the federal government and administered by thirteen agencies or departments. The major portions are under the Bureau of Land Management (BLM) of the Department of the Interior (470 million acres) and the U.S. Forest Service of the Department of Agriculture (187 million acres). While the Alaskan Lands Act has reduced the federal ownership and the jurisdiction of the BLM, it has increased the jurisdiction of other Department of the Interior agencies – the Fish and Wildlife Service and Park Service – and the Forest Service.[19]

Most of these lands have historically been available for multiple use: commercial activities such as logging, mining, and livestock grazing as well as recreation and aesthetic preservation. Yet in recent years, as almost any issue of the *Oil and Gas Journal* will attest, there has been a growing dissatisfaction on the part of commercial users with the restrictions on their access to these lands. This restrictiveness has been both outright and in the form of delaying tactics, e.g., burdensome permitting and reporting prerequisites for public land use. The Department of the Interior's own task force on the availability of federally owned mineral lands found cause for alarm: Noting that roughly two-thirds of federal lands had use restrictions on mineral development,[20] the task force found that on the whole "withdrawals [from mineral development] were made with inadequate, and, in some cases, without any, assessment of mineral values," and, perhaps more alarming, that there were "cases where mineral assessments were not considered when making land-use trade-off decisions."[21] Furthermore,

> The Task Force believes that proper implementation of the mineral report requirements in P.L. 94-579 will correct many of these problems for the formal withdrawal process.
>
> There appears to be *insufficient support being given to those agencies responsible for preparing mineral assessments* on existing and proposed wilderness areas and d-2 lands in Alaska. Considerable support for this program was presented at the Task Force's public hearings. . . .

[19]U.S. Department of the Interior, *Final Report of the Task Force on the Availability of Federally Owned Mineral Lands, Vol. 1* (Washington, D.C.: Government Printing Office, 1977), p. 36.

[20]Ibid., p. 43.

[21]Ibid., p. 8.

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> The most important aspect of the formal and informal withdrawal procedures is the analysis and use of the resource information during the decisionmaking process. The Task Force found that in some cases, although adequate mineral assessments were made, they were disregarded or inadequately considered during the decisionmaking process. Frequently mineral potential was discounted simply because no past or present mineral production existed. The Task Force found that, in many cases, the land-use decisionmaking process is not based on adequate mineral information and does not consider the relative costs and benefits of alternative land uses.[22]

Supposing this characterization of bureaucratic obstructionism to be correct, what explains it? Is it a special case of guerrilla warfare by well-intentioned, idealistic environmental elitists? Or can it be explained by the less lofty but more general self-interested behavior of bureaucrats? While some of the behavior may reflect the ideologue, and while there are clear differences in the desired degree of land restrictions favored by the two major political parties, it is nonetheless significant that leaders in both parties have expressed general concern about obstructionism within the federal bureaucracy. For example, Caspar Weinberger, Secretary of Defense in the Reagan administration, remarked that cabinet chiefs should be "advocates *of* the administration's overall policies *to* their departments, rather than advocates *from* the departments of the policies that the special interests wish."[23]

Arthur Schlesinger, historian and former White House aide to President Kennedy, opined that

> by increasing the size of their staffs, Presidents insert a screen between themselves and the Executive and Legislative branches and thereby reduce their own direct influence and weight of personal leadership. Large staffs, composed of ambitious and overprotective people determined to justify their existence, make work and make trouble. They cut off the President from the government and the government from the people.[24]

Professor Schlesinger's remarks were directed at the White House staff, but they apply with equal force to the cabinet departments. Attesting to this are the observations of Hodding Carter III, former assistant secretary of state under President Carter:

[22] Ibid., pp. 8–9. Italics added.

[23] Walter S. Mossberg, "Weinberger May Have Tough Time Satisfying Hawks, Budget Cutters," *Wall Street Journal*, December 12, 1980, pp. 1, 26.

[24] Arthur Schlesinger, Jr., "Bureaucracy and the Republicans' Businessmen," *Wall Street Journal*, January 7, 1981, p. 24.

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> Some Foreign Service officers tend to view their jobs as representatives of the foreign government to which they are accredited or on which they are expert, rather than as representatives of the United States. A smaller, but quite visible, minority at State is frankly contemptuous of the American political process and American politicians, viewing both as messy impediments to sane foreign policy.[25]

Clearly, whether the bureaucrat's goal in budget expansion is private income or the power to "do good," the elected representatives of the people are to some extent undercut and, to precisely that extent, so is the democratic process of governance.

Since the motivations for power or for private gain both require a larger quantity of land restriction, these motivations are operationally consistent with our model of budget maximization. In either case, as is common to the observations of Weinberger, Schlesinger, and Carter, the choices of the bureaucrat are substituted for that of the executive and his appointed representative, the cabinet secretary, subject only to staying on the executive's marginal valuation curve. Thus the agency or service bureaucrats exploit the secretary by means of their information advantage precisely as the model has suggested. Hence we may proceed as if budget maximization were the incentive.[26]

Since the federal agencies charged with the disposition and management of the U.S. public lands must allocate them between apparently competing (i.e., nonsharing) claimants, they are faced with a classic economic problem. In figure 3 this problem is depicted as the proportional allocation of land between exclusive restricted use (e.g., in designated wilderness areas) whose marginal valuation is denoted mv_W and commercial use (e.g., petroleum exploration and development) whose marginal valuation is denoted mv_C. The vertical axis measures in dollars the social marginal value of additional percentage allocations to either use, and the horizon-

[25] Hodding Carter III, "The Unequal Bureaucratic Contest," *Wall Street Journal*, January 8, 1981, p. 19.

[26] It is informative to note that the motivation for the Department of the Interior's study into restrictions on public land use was an implicit belief that the executives knew less than the agencies about the restrictions: "The Department has come to realize that it does not know enough about the cumulative effect of actions restricting mineral development on Federal lands. The primary missions of the Task Force on Mineral Lands Availability are to clarify the ways in which these restrictions occur and to recommend improvements in the relevant procedures and information base so that an informed assessment of the extent and impacts of the restrictions can be made by both government officials and the public" (Department of the Interior, *Final Report*, p. 11). Compare this assessment with Posner's public-interest rhetoric observation.

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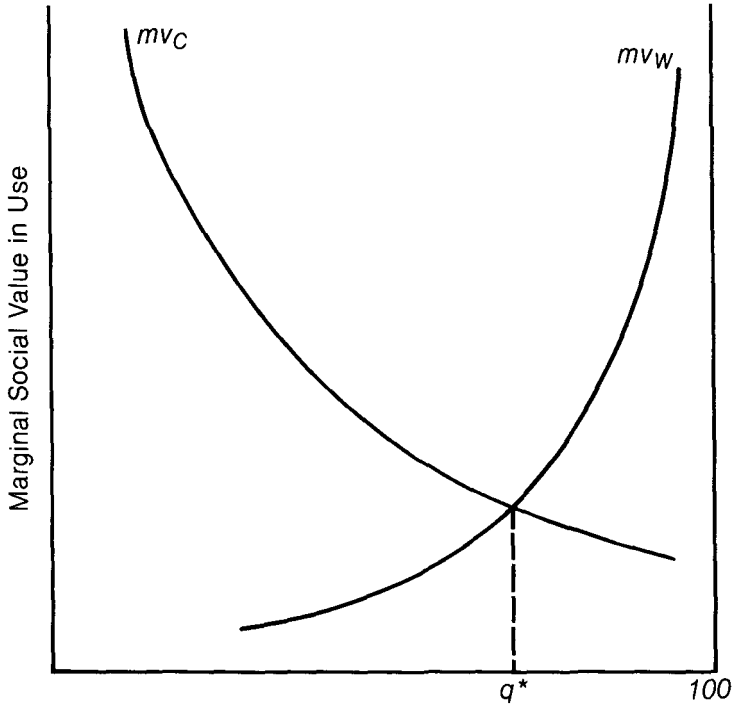
FIGURE 3
AGENCY-DETERMINED LAND USE RESTRICTION, q^*, AT $mv_C = mv_W$



tal axis measures the percentage of public land in each use – from left to right in commercial uses, and from right to left in wilderness-restricted uses; the total of the two uses is 100 percent at the 100-ordinate, and at any point along the horizontal axis the two uses sum to 100 percent.

The solution for this allocation problem is apparently at q^* where the marginal valuation of exclusive wilderness uses, mv_W, is equal to the marginal valuation of commercial use, mv_C. Since commercial use is the alternative forgone when land is reserved for wilderness, this alternative use is the cost of wilderness restrictions.

This solution, q^*, is presented in a slightly different way in figure 4. In figure 4 the vertical axis is again in dollars, but the horizontal axis now measures the quantity of land with wilderness restrictions (rather than the percentage of total restricted land in figure 3). Figure 4 then presents the agency's total budget in relation to land restriction: The curve MV_W is the executive's demand for the

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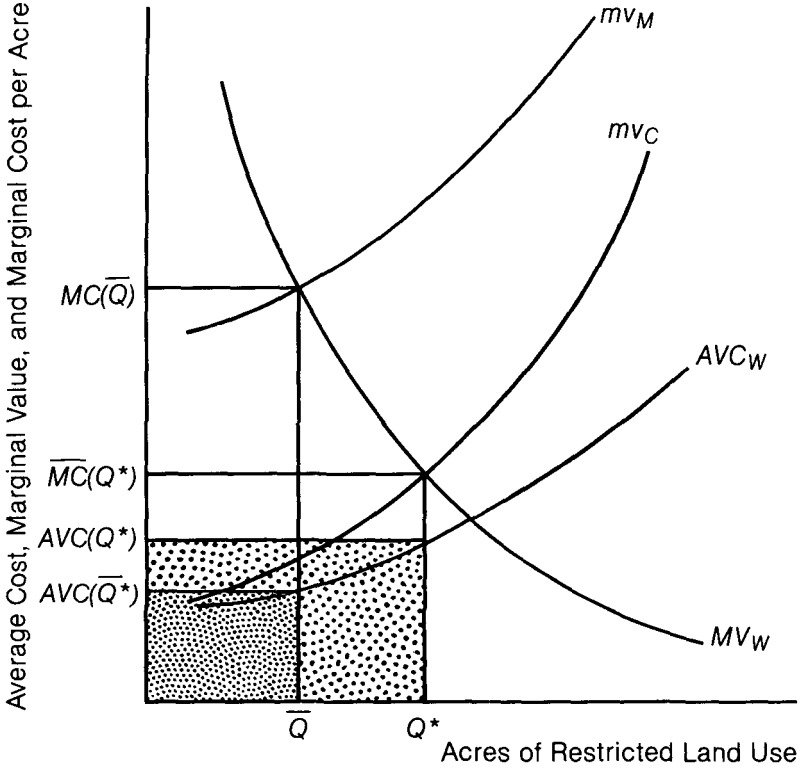
FIGURE 4
AGENCY BUDGET AND ITS RELATION TO LAND USE RESTRICTION



restrictive land management services, and MV_C is the cost of such restrictions. Thus the agency's budget would be the product of the average variable cost of managing Q^* acres, $AVC(Q^*)$, and Q^*; this budget is the dotted rectangle of figure 4.

The private commercial users excluded from the use of lands Q^* will contest these restrictions by lobbying in the Congress and by legal actions in the courts with an intensity measured by the marginal private production forgone, MV_C. Hence the agency may be able to justify a budget even larger than the dotted rectangle—perhaps as large as $MC(Q^*)$ times Q^*—containing not only the management resources for Q^* but also the legal and research resources necessary both to counter these challenges and to document the values in MV_W.

What is wrong with this solution? On the face of it nothing, since the alternative use values are balanced at Q^* in terms of acres or q^*

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in terms of percentage allocations (figure 3). However, the premised alternatives are too circumscribed: MV_C *understates* the true opportunity cost, which is multiple use – recreation or scenic or scientific, *and* commercial – which has marginal value MV_M in figure 4. With this higher opportunity cost, we see that land restrictions should be reduced to $\bar{Q}$ acres consistent with equating MV_M and MV_W. As a direct consequence, the agency's budget would be reduced to the densely dotted rectangle $AVC(\bar{Q}) \times \bar{Q}$.[27]

[27]This tactic, presenting an inappropriately restrictive set of alternatives from which the executive or cabinet secretary must choose, is not only a ploy by agencies of the Department of the Interior (see Department of the Interior, *Final Report*, p. 87), but, according to Hodding Carter III, a practice at the State Department as well. Discussing clientitis, i.e., "a symbiotic relationship between government officials who administer programs, the private interests who must live with them and the members of Congress who oversee their effectiveness and fund their continuances," he observes that its impact is

> not always direct. It is often as not expressed in what can be usefully described as the Option B Syndrome, which surfaces when decision-making desired by the White House or required by presidential rhetoric can no longer be postponed or resisted. In the face of this pressure, what emerges from tortured intra- and inter-agency consultation is a document which contains *two phony choices and one carefully crafted waffle* which appears to offer movement but which in fact comes as close to standing still as possible. It becomes the favored option precisely because the other two are impossible.
>
> There is no one answer to all of this, nor should it be considered a short course in demonology. There is nothing sinister about the way the bureaucracy works and much which is quite understandable. The men and women who staff it are by and large competent, dedicated public employees. But *their basic objectives and each administration's are patently not the same. Their sense of time is not the same.* To the degree that the new president fails to recognize that and fails to use every available lever, starting with the appointment power, to that degree he guarantees that his brief honeymoon will be appreciably shortened and his program chances reduced ("Unequal Bureaucratic Contest," p. 19; italics added).

In order for the parallel to be most striking, note that the mineral and petroleum industries are not the likely client or special interest of the Fish and Wildlife Service, the National Park Service, the Forest Service, or the Bureau of Land Management.

Additional qualitative support comes from another *Wall Street Journal* article, by Arlen J. Large, provocatively titled "South Pole Scientists Hope to Freeze Out Commercial Prospects" (January 7, 1981, pp. 1, 19). Having described the possibility that the multinational treaty excluding commercial activity might be abrogated if commercially exploitable minerals were discovered, the article concludes:

> American scientists show an almost religious fervor about keeping out commercial exploiters. Gisela Dreschhoff of the University of Kansas has been flying with a colleague over the spectacular ice-free valleys east of the Ross Sea and using a gamma-ray detector to spot uranium deposits that would trace the continent's geologic history. They bristle at any suggestion that they are "prospectors" looking for commercially exploitable minerals. "Personally, I don't want to see it," Miss Dreschhoff says. "I want to see Antarctica as a laboratory and nothing else."

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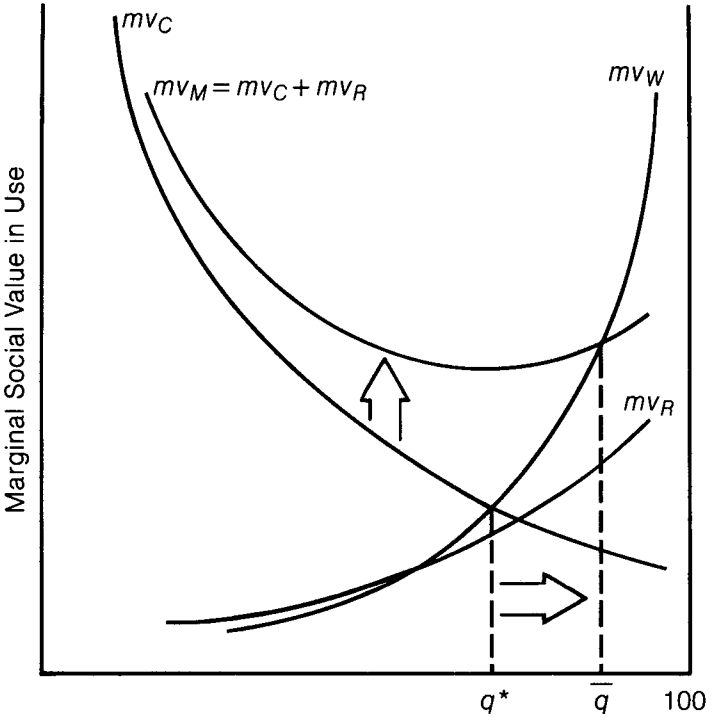
FIGURE 5
SOCIAL OPTIMUM LAND USE RESTRICTION, $\bar{q}$, AT $mv_M = mv_W$



In figure 4 we see that the bureau has the same incentive to understate costs as was illustrated in figures 1 and 2, namely, a larger budget. Where the case for budget augmentation in figures 1 and 2 was primarily the difference between average and marginal costs – also available in this case – the primary cost understatement here is the forgone alternative use or social cost of excessive restriction. However, in either case the bureau's budget and the scale of its activities are too large, and the excess is made possible by the bureau's information advantage. See the Department of the Interior's explicit statement in note 26, page 596 above.

Figure 5 presents the case for the multiple-use alternative. It is essentially a corrected version of figure 3 in the addition of mv_R, the marginal value of recreation, as an example of public land activities that can be accommodated in multiple land use. Thus mv_W is initially higher than mv_R since recreation in the pristine wilderness may up to a point be somewhat more valued than recreation on

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multiple-use land; but eventually mv_R is higher than mv_W, since backpackers and canoeists may want access roads; however, the exact difference is not the issue here, only that hunting, hiking, canoeing, etc., are still enjoyable when some commercial activity is taking place. We now have the appropriate choice as between multiple use, $mv_M = mv_C + mv_R$, and exclusive wilderness use, mv_W. As is apparent in both figure 3 and figure 4, the result is a less restrictive land use policy, represented by $\bar{q}$.[28] Clearly, the lessened restrictions on land use would reallocate some management responsibilities implying smaller budgets for the managing agencies and larger budgets for agencies with increased responsibility, such as those responsible for mineral assessments.

How damaging to economic and other national policies the excessive restrictiveness of public land policy may be is a quantitative question requiring an empirical analysis that has not been undertaken here; however, that it *is* damaging is the conclusion of the Department of the Interior's own task force study.[29]

In this paper we have addressed the simpler question: Is there an analytic foundation for expecting federal land policy to be too restrictive? If so, what qualitative evidence can be brought to bear on the issue? There would seem to be three questions:

1. Are important petroleum and other resources being locked up by land use restrictions?
2. Is there any evidence of excessive federal land restrictions?
3. Is multiple use of such lands feasible?

The answer to all three of these questions seems to be yes.

First, restrictions on access to federal lands are of two types—explicit formal closing to commercial activity and informal or administrative closing by delaying tactics, legal challenges from nongovernment parties, and set-asides for further study preliminary to formal closing.[30]

[28] Alternatively, we could subtract the multiple recreation marginal value from mv_W and equate the residual with mv_e; the resulting intersection would be at the $\bar{q}$.

[29] Department of the Interior, *Final Report*, pp. 8–9.

[30] Ibid., p. 6.

To assess the impediments of red tape, consider the following anecdote from the *Oil and Gas Journal* (John H. Jennrich, "Watching Washington," April 14, 1980, p. 69):

> Charles J. DiBona, president of the American Petroleum Institute, tells the story—he swears it's true—of an operator in the Rocky Mountains who fought the bureaucracy for 14 months to obtain a drilling permit.
>
> Once the papers were in order, says DiBona, the operator drilled the well in 38 hrs.

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According to an American Petroleum Institute study,

> the federal government owns 775 million acres onshore, mostly in 11 western Lower 48 states and in Alaska. Off shore, the government controls 528 million acres on the OCS.
>
> API estimates that these lands hold:
>
> 37% of U.S. undiscovered oil resources but provide only 16% of U.S. production.
>
> 43% of U.S. undiscovered natural gas but provide 30% of production.
>
> 40% of remaining coal but provide 8% of production.
>
> 80% of recoverable reserves of shale oil and 95% of tar sands.
>
> API figures that about two-thirds of federal lands—about 500 million acres—are either formally closed, highly restricted, or moderately restricted from oil, gas, and other mineral resource development.
>
> The association says the federal offshore leasing program has been a "stop-and-go affair" ever since drilling began in federal waters in the 1950s. It cites frequent postponements and cancellations of scheduled sales and lockup of many offshore areas of great potential. And, it adds, less than 4% of the OCS has been leased.[31]

With respect to the Overthrust Belt region of the states of Wyoming, Utah, and Idaho, the Department of the Interior study was very critical of federal land policies. It found that 47 percent of the federal lands in the region were effectively closed, but that "more importantly, however, many of the areas closed to oil and gas leasing appear to the casual observer to be open for oil and gas leasing, since no removal order has been published to remove them formally from mineral development. In fact, it is likely that not even the local land administrators know how much of the area is actually available for oil and gas leasing. Without such information it is difficult to see how proper tradeoff decisions can be made."[32]

Both the General Accounting Office (GAO) and the Department of the Interior have argued that the wilderness status of land should not be decided until the potential value of the petroleum assets thereby forgone has been estimated; the GAO observed that the preliminary analysis by the United States Geological Survey "would seem to support a decision for exploration to acquire more data

---

But then he needed permission for a pipeline to move the oil. And, says DiBona, he's been waiting 14 months and still doesn't have a pipeline connection.

[31] "Outlook Cloudy for More Public Land Energy Work," *Oil and Gas Journal*, November 10, 1980, p. 140.

[32] Department of the Interior, *Final Report*, p. 58.

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before reaching any conclusions."[33] The premature foreclosure of public lands is precisely the vehicle for understanding the opportunity costs of exclusive use postulated in our model. This obscuring of alternative-use values can effectively be achieved not only by permanent closure, but also by delaying access. A recent federal court decision in Wyoming found that, in effect, "the Federal government has the responsibility to free government lands as quickly as possible for mineral development. The court said failure to do so amounts to land withdrawals not intended by Congress."[34]

These are clear instances of excessive land strictures, but evidence concerning an entirely different activity offers additional support. In another study, entitled *The Federal Drive to Acquire Private Lands Should Be Reassessed*, GAO summarized its findings as follows:

> This report focuses on the activities of three federal agencies with major land management and acquisition programs—the Forest Service, Department of Agriculture, and the Fish and Wildlife Service and the National Park Service, Department of the Interior.
>
> The three agencies generally followed the practice of acquiring as much land as possible without regard to need and alternatives to purchase unless specifically spelled out in legislation. Consequently, lands have been purchased not essential to achieving project objectives, and before planning how the land was to be used and managed. Because of this practice, Federal agencies overlooked viable easements, zoning, and other Federal regulatory controls including the dredge and fill permit program for protection wetlands administered by the Corps of Engineers, Department of the Army.[35]

In this GAO study, the exclusive land acquisition was primarily in cases where the intended use of the land was recreation and preservation of scenic characteristics and for which private and public

[33] General Accounting Office, *Oil and Gas Potential in the Arctic National Wildlife Range* [EMD-80-56] (Washington, D.C.: Government Printing Office, January 22, 1980).

[34] "Outlook Cloudy," p. 143.

Indeed, the variety of delaying tactics alternative to the legal establishing of wilderness restrictions are perhaps limited only by the creativity of the administrators in interpreting the laws. Early in the debate over the Alaskan Lands Act the secretary of the interior was reported to have threatened to accomplish the withdrawal administratively (if Congress did not) under the 1906 Antiquities Act. (See "Editorial: U.S. Can Have Both Mineral and Wilderness," *Oil and Gas Journal*, September 4, 1978.) This is not as farfetched as it might seem: An application to the federal government for enlargement of an open-pit copper mine was recently refused because it would endanger a historically significant site, the nineteenth-century buildings of the copper mining town, Butte, Montana.

[35] General Accounting Office, *Federal Drive*, p. i.

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uses were in some agreement. Thus in the case of mineral development, where private use and the government agency use are in some conflict, we might expect these acquisitive and restrictive motivations to be, if anything, stronger.

Finally, consider the feasibility of multiple use of public lands. Commercial logging, livestock grazing, commercial trapping, and mineral development have historically been the more important uses of public lands. In recent years conflicts of commercial activity with the aesthetics of wilderness preservation and land use for recreation have led to restrictions on commercial activities. Yet the instances of successful joint use seem to far outweigh the exceptions. (To the areas of such use listed above, we could add fishing and petroleum production in the Gulf of Mexico.) Moreover, three further features of mineral development in general and petroleum exploration and development in particular seem to argue in favor of joint use:

1. Small proportions of land involved – usual estimates are much less than 1 percent in the case of petroleum
2. The nondisturbing nature of the exploration process itself – primarily measuring, mapping, and taking geological samples
3. The transient nature of the extraction process – 20 to 40 years, a short span in geological or even historic perspectives

In this connection, the Department of the Interior Task Force observed that:

> It frequently has been pointed out that mineral production requires a relatively small proportion of our land base. In fact, in the entire history of the United States the total land area disturbed by all mining including coal, stone, oil, gas, sand and gravel, and metal and nonmetallic ores, has been less than .3 percent of the total surface area of this country [N.B.: cumulative not simultaneous]. . . .
>
> But compared to other mineral resources, oil and gas deposits can often be developed without seriously impacting other resource values, assuming the proper environmental controls are adhered to. This suggests that ways could be found to allow for the controlled exploration of oil and gas on portions of these withdrawn areas.
>
> Some of the discoveries in the Overthrust Belt are rather large, e.g., fields with oil potential of at least 100 million barrels or a gas potential of 1 trillion cubic feet. Should a field of this size be known to exist under a picnic area, wildlife habitat area, or a proposed wilderness area, the significant economic values of the petroleum resource could easily absorb the costs of the special development procedures that could be used to develop the petroleum while maintaining the surface use. Allowing such temporal

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> land uses would produce greater net benefits from federally-owned lands.[36]

Even in the "worst" case, i.e., finding a supergiant field, the costs for the environment seem eminently reasonable given the social benefits of production:

> What if the range [William O. Douglas Wildlife Range] were opened to exploration and the "worst" happened – a discovery as large as Prudhoe? Facilities to develop the strike would occupy only 1½% of the 8.9 million acres now included in the range, according to James Hohler, senior exploration Vice-President of SOHIO.[37]

Conclusions and Implications

Bureaus have strong incentives to increase their budgets and can do this by understating their marginal costs. We have argued in this paper that federal agencies controlling public land use behave in a fashion consistent with this model by attempting to close out uses of land alternative to those of a particular clientele. While contemporary history has given us the instance of environmentalists in command at these bureaus with, consequently, too little commercial use of public lands, the model would apply equally well if representatives of industrial and commercial users were dominant; in this alternative case, recreational and scenic preservation use would be given short shrift, and, once more, multiple use would be a concealed possibility.

The common thread in bureaucratic budget augmentation is that the bureau – whether municipal, state, or federal, regulatory or producing a service – knows more of its costs than does its (nominally) executive superior. Consequently, the bureau cannot be reformed by management innovations composed of internal changes; rather, it must have its informational advantage nullified. In the case of private firms and, in particular, of financial firms, the owners' welfare is advanced by management not only because of the private incentives that drive the manager, but also because of the existence of financial records about the firm and, therefore, the possibility of objective outside auditing.

As we have seen in several instances, the General Accounting Office of the comptroller general has acted as a source of objective information – i.e., free of private lobbying influences, of the bureau's interests, and, most important, of any direct dependence for its

[36] Department of the Interior, *Final Report*, pp. 16–17; 58–59.

[37] "Editorial: Congress near Choice for Nature against Man," *Oil and Gas Journal*, August 4, 1980.

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budget on the nature of its analytic findings. These services are generated in response to inquiries from committees or individual members of Congress and also by the independent research interests and hunches of its staff. The Office of Management and Budget within the executive branch offers a somewhat more limited source of analysis on the same grounds. The particular locus of the investigatory entity is not as important as is its independence of the bureau. All that need be made clear and evident is that bureau budgets and decisions would be subject to an independent audit; hence, cost functions and the complete analysis of bureau policies internally would be made more complete and inclusive given the likely prospect of external analytic review.

Earl Thompson, reviewing Niskanen's book on bureaucracy, made this point quite clearly in discussing the different contexts within which private and bureaucratic managers perform:

> These differences can be derived from the definition of governmental institutions. What makes an organization "governmental" rather than "private" is the fact that the organization is not economically responsible for some specified set of real losses it imposes on others or cannot sue to capture some specified set of gains it confers upon others.... Government institutions are more efficient than private institutions if and only if the economies of irresponsibility exceed the costs.
>
> The economies of irresponsibility are the savings in the costs of measuring and evaluating the effect one has on the benefits of others while the costs are the well-documented disincentive effects which occur when an individual does not receive his product. A corporation president has every aspect of his performance evaluated every day in the stock market by hundreds of profit calculators. A bureau chief has a small set of his socially relevant performance evaluated about once a year by a few busy individuals. So the typical bureau chief makes hundreds of decisions each year that significantly affect the aggregate benefits of others that will never be made the basis for payments or charges to him. Therein lie the benefits, costs, and peculiarities of bureaucracy and government activity. What an economist can profitably contribute to improving governmental efficiency are incentive systems which will induce more efficient behavior from our bureaucrats without requiring markets or elections. Pleas to convert bureaus to competitive suppliers, while possibly wise, seem to miss the whole point of governmental supply.[38]

What Thompson, Posner, Braden-Fort, and this paper have each argued is that to induce socially efficient bureau or agency decisions requires that their political executives have effective and ob-

[38]Thompson, "Book Review," p. 93.

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jective information about the total costs of the agency's activities. Since the agency's budget and, therefore, the careers of many agency professionals may be adversely affected by objective cost information, the agency cannot be relied on as the sole source of such information. Only if cost analyses can be obtained from an independent agency whose budget and whose career bureaucrats are not benefited by cost underestimates can we overcome the innate bureaucratic incentives to understate costs.

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UNITED STATES ENERGY POLICY: The Translucent Hand and the Art of Muddling Through

Edward W. Erickson

Introduction

The United States has been searching for some years for a viable energy policy. Energy policy became a matter of prominence in the early 1970s, when world oil prices began to climb and OPEC emerged as a front-page phenomenon and a familiar topic on the evening news. This is not to say that there were no substantive energy policy issues that antedated the oil price explosion and the takeover of the world oil market by the producing nations. Indeed, such energy policy problems as natural gas pricing, oil import policy, the tax treatment of income from oil and gas production, public lands and the leasing of the Outer Continental Shelf, and interfuel competition, for example, already had a long history before energy became a fashionable issue. But energy policy had seemed to involve arcane issues that were often submerged in a general perception that world oil supplies were available in unlimited quantities at bargain-basement prices forever.

In the quarter century after World War II, the output of the principal petroleum-exporting countries increased at a sustained compound rate that was a double-digit phenomenon. Oil exports from the countries that became OPEC doubled and redoubled every six or seven years. Abundant world supplies of oil were the major driving force in the determination of energy prices. The United States, once an oil exporter, became increasingly dependent on oil imports as the incremental source of energy consumption and evolved into the largest single demander of oil in the world market.

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The author is Professor of Economics and Business at North Carolina State University, Raleigh 27607.

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Gasoline is such a commonly used product that it is a convenient reference point. The inflation-adjusted real price of gasoline in the United States steadily declined up to 1972, the year before the oil embargo, an experience typical of oil products. Faced with this competition and subject to a regulatory freeze, the real wellhead price of natural gas in the United States also declined during the 1960s. In addition, although competition with oil and gas forced down its real price, coal lost market share.

The world oil market was undergoing profound changes prior to the oil embargo in 1973, but it was the embargo that interrupted supplies whose security had been generally taken for granted and whose prices had been regarded as foreordained to remain low. The shortages and price increases that accompanied the embargo were met with shock, outrage, suspicion, disbelief, and anger. It was not an opportune time for rational discussion of energy policy issues.

By coincidence, the regulation-induced shortage of natural gas in the interstate gas market, an inevitable legacy of wellhead ceiling price controls, was also beginning to pinch. Also, further improvements in the thermodynamic efficiency of electric generation had been exhausted, and the promise of nuclear power as an energy source too cheap to meter had failed to materialize. In addition, environmental and safety regulation of the production of coal and environmental restrictions on coal use began to make coal a more costly fuel. The public was thus confronted with higher electricity prices in addition to gasoline lines, higher oil prices, suddenly perceived insecurity of supply, and natural gas curtailments. Across the board, the illusion that inexpensive energy in relatively unlimited quantities was a birthright of the American public was being destroyed.

Coming to grips with these new realities has not been a happy experience. The uncongenial air of recrimination and scapegoating created an atmosphere that stifled positive policy responses. The situation was further complicated by ill-conceived general price controls inspired by an unworkable attempt to cope with inflation. Perversely, when general price controls were lifted, specific controls as a vestige of the economic stabilization package were left in place on crude oil and refined products alone. Together with Federal Power Commission wellhead ceiling price controls in place in the interstate natural gas market, crude oil price controls meant that the vast majority of U.S. primary energy supplies were artificially restrained from responding to new realities in the energy markets.

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At the same time that crude oil price controls were settling into place, the problem of coping with a resolution to two decades of inhibition of U.S. natural gas supplies due to wellhead ceiling price controls was proving to be nearly insurmountable for Congress. In addition, regulation of electric and gas utilities was mired in hearings at the state and federal agencies, where the problems were only dimly understood and old remedies were proving useless.

In a sudden rush and with an intense focus that derived from events in the world oil market, the problems of energy had emerged from an era of benign neglect into one of distressed concern. And as if all this were not enough, America was then visited with two consecutive winters that were among the hardest in recorded history.

In retrospect it is perhaps surprising that we coped as well as we did. But there was ample room to do better. One should be allowed a quiet smile in looking back on a program to achieve energy independence that was rooted in a system of price controls that suppressed the domestic supplies of oil and gas and encouraged consumption and imports.

These policy shortcomings were rooted in more than social inertia and short-run political expediency, however. The conventional wisdom of the moment was that world oil prices—rather than rebounding from a long slump of unusually low levels at $1 to $2 per barrel f.o.b. the Arabian Gulf—were abnormally high at $12 per barrel. A parallel strain of this wisdom was that the OPEC "cartel" would shortly collapse, which in turn led many to believe that immediate coping was a short-run "management" problem and that a new normalcy was just around the corner. Although we could not completely return to a blissful state of relative indifference to questions of energy supply and demand, it was hoped that the long-run equilibrium world oil price might be in the range of $7 to $8 per barrel (in, say, 1974 dollars), and the longer-run problems involved insecurity of imported supplies and phasing-in of liquids from shale and gas from coal at costs somewhat, but not greatly, above the landed cost of imported oil.

These hopes have proved illusory. The present, perhaps temporary, "softness" of the world oil market at current dollar prices in the $30 to $40 per barrel range is unlikely to be a delayed vindication of these hopes. We have been continually surprised at almost every turn of events in energy supply and demand. World oil prices have risen, and risen again. Domestic conventional natural gas production has held steady against expectations of declines, although reserve additions have not yet caught up to production. Domestic

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coal is gaining in absolute and relative terms without the necessity of binding artificial restrictions on other fuels. Simple economics has slowed the rate of growth of nuclear power, and as a result anticipated shortages of uranium and enrichment capacity have not yet materialized. Higher energy prices than planned for have not caused the economy to crater, and long-run, inflationary pressure is increasingly, and correctly, being recognized as a monetary and fiscal, rather than an energy, policy problem. Price-induced conservation has reduced demand pressures more rapidly and significantly than was initially thought possible. Higher domestic crude oil prices have caused a record surge in drilling activity and created productive exploration plays in heretofore untested geological prospects. In light of these surprises, it is appropriate to develop a new perspective on where we have been and where we may be going.

A Basic Perspective

It is perhaps an overstatement to say that all the critical policy interconnections radiate from world oil prices and the relationship of U.S. energy markets to the world oil market. Nevertheless, it was the explosion of world oil prices and the oil embargo that dramatized energy policy problems. And oil is the most versatile substitute fuel for a wide range of uses in which other forms of energy compete. Thus it is helpful to have a perspective on world oil prices and the world oil market as a vantage point from which to address domestic energy policy issues.

The initial shock of substantially higher world prices produced the unfortunate but understandable reaction that higher world prices were somehow not real, did not exist, would go away, or could be ignored by the United States in charting its own domestic energy policies. One can have sympathy with these feelings, but they were naive. The United States was, is now, and for the foreseeable future will be, critically dependent on imported oil as an important component of our mix of energy supplies. The very versatility of oil as a fuel means that the prices we pay for oil imports in the world market penetrate into almost all facets of our use of energy.

Although it would be convenient if we could magically insulate ourselves from the effects of increases in the world price of oil, we cannot. Because we import so much oil, any attempt to do so is ultimately a subterfuge with greater long-run costs than short-run benefits. Whatever the world price of oil is, and however it is determined, it ultimately permeates all the economic choices that we make in energy production and consumption, lifestyles, and the

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selection of capital equipment. It is concise and correct to say that the best first approximation of the minimum social opportunity cost of energy consumption in the United States is the landed cost of oil imports.[1] If energy markets are to operate efficiently in allocating scarce energy, capital, and labor resources through our individual, decentralized consumption and production decisions, they must be free to reflect this reality.[2]

This reality is central regardless of the nature of the price determination process in world oil markets. It has been argued that we should cushion our domestic energy economy from the full brunt of higher world oil prices because these prices are monopoly prices set by a "cartel" of producing countries. It makes no difference. Whether OPEC is a cartel or a discussion club, the world price of oil is the critical variable that sets the standard of cost effectiveness for our domestic decisions.

The recent decontrol of U.S. crude oil prices was a belated recognition of this principle. But the excise tax on U.S. crude oil production that accompanied price decontrol drives a wedge between the marginal social benefits and the marginal social costs of exploration, development, and production activities directed toward maintaining or increasing U.S. oil supplies. Since, contrary to popular belief, a large majority of gross producer incremental revenues from crude oil production accrue to governments as federal and state income taxes, severance taxes, and royalties, the "windfall profits" tax bulks large in comparison to the net incremental revenues after tax and costs, which are the rewards that motivate producers to pursue additional domestic oil production. It is likely that before the crude oil "windfall profits" tax runs its statu-

[1] More sophisticated analyses attached a security premium of $10 per barrel, or more, to the landed cost. See for example James M. Plummer, "The Oil Import Reduction Premium and Oil Stockpile Premium: Modeling and Policy Implications," Presidential Address delivered at the second annual North American meeting of the International Association of Energy Economists, Washington, D.C., October 6-7, 1980.

R. Lemon, "The Direct and External Benefits of Reducing Oil Imports," *Energy Topics*, October 1, 1979; idem, "The Externalities of Oil Imports Revisited," *Energy Topics*, September 1, 1980, Institute of Gas Technology.

U.S. Department of Energy, *Reducing U.S. Oil Vulnerability: Energy Policy for the 1980s*, prepared by the Assistant Secretary for Policy and Evaluation, November 10, 1980, DOE/PE-0021.

[2] It is noteworthy that such producing countries as Norway, the United Kingdom, and the Netherlands already incorporate this reality into their energy policies. It is also reported that OPEC countries such as Saudi Arabia are also proposing to evaluate the costs and benefits of internal uses of energy on the basis of world market oil prices.

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tory course, it will be in the social interest to revisit it and accelerate its termination.

Two other major areas of domestic energy supply and demand exist in which production and conservation decisions are not free to reflect the new energy realities: natural gas and electricity. Natural gas and the Natural Gas Policy Act of 1978 are topics to which I will return in more detail subsequently. With regard to electricity, the major problem is that state utility commissions have not allowed rates of return that permit companies to earn their costs of capital. This problem has been compounded by earnings erosion that has prevented companies from earning even their allowed rates of return. Price-induced conservation has delayed the appearance of a national shortage of generating capacity, but this is an industry with long lead times for new plant construction. If current trends continue, it is likely that a considerable amount of new demand growth will be met with oil-fired internal combustion peaking turbines that have lower capital costs than coal-fired or nuclear base-load generating capacity, but which benefit more from automatic fuel adjustment clauses. In addition, older oil-fired base-load generating capacity will be kept in service for a longer period of time. Consequently, the U.S. demand for imported oil—the incremental source of supply to the U.S. energy economy—will be greater than would be the case if electrical utilities were allowed to earn their actual costs of capital and optimize their capacity additions against expected demand growth.[3] Any level of U.S. demand for imported oil greater than that which an unfettered domestic energy supply and demand balance would create increases our vulnerability to an oil supply interruption and puts upward pressure on world oil prices. Again, even from the standpoint of domestic electricity generation, we come full circle to the relationship between U.S. energy policy, oil imports, and the world price of oil.

In this regard it is worthwhile to consider in somewhat more detail the price formation process in the world oil market and the trends and circumstances that influenced its development. A number of additional observations, therefore, are relevant here. First, the initial explosion of world oil prices was a discontinuous release

[3]There are at least two further matters of policy significance concerning electrical utilities. The first is the possibility of deregulating the power generation stage of the industry. The second is how cogeneration would fit into the power grid were generation deregulated. In addition, there is the problem of forecasting load growth in a deregulated environment where users and suppliers were receiving the correct price signals and cogeneration was a part of the supply mix. These questions are beyond the scope of this review.

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of pressures that had been building up for some time. This discontinuity was primarily a politically determined event associated with the circumstances surrounding the embargo, but the upward pressure on world oil prices would have resulted in a general price rise in any event, and—although the rise would not have been so sharp and traumatic—it is likely that the resultant prices would have been about the same. The pressure that gave impetus to the realignment of the world oil market was the integration of the tremendous oil resources of the Middle East into the world energy demand system. When that integration was completed in the early 1970s, the framework of pricing and tax policies, production decisions, and quasi property rights dramatically changed. No longer were the revenues of the producing countries primarily determined by a doubling and redoubling of production at relatively static tax yields. Instead, production has become relatively static, and we have now seen doublings and redoublings of prices as political turmoil and a general unavailability of alternative, lower-cost supplies have shaped the market.

Second, although it is convenient and fashionable to speak of OPEC as a "cartel," there is a growing body of opinion that the world oil price is an approximation of the competitive cost of energy in an unstable and uncertain world.[4] OPEC has no formal or informal system of production controls. Prices are discussed at periodic meetings, but each country acts in its own best interest to get whatever it can. Saudi Arabia generally appears to have lower price preferences than other countries, but there are both political and economic explanations for this preference in a market where Saudi Arabia is the largest producer among many other sellers. Furthermore, alternative supplies of energy do not appear to be available at such low costs or in sufficient quantities to pose a serious threat to world oil prices at their approximate current levels. All of these considerations suggest that an appropriate way to view world oil prices is as the competitive world cost of energy. Were this view to become widely held, it would greatly simplify the process of formulating and executing national energy policy.

Third, however the price formation process in world oil markets is characterized, it is in the interest of the United States for the upward trend in world oil prices to be restrained as much as possible because the United States is the largest single importer of oil in the

[4]See for example Walter J. Mead, "A Skeptical View of OPEC as a Cartel," forthcoming in the Proceedings of the University of Calgary Conference "Energy: Coping in the 1980s" held in Calgary on October 21-22, 1980.

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world. Because domestic energy supplies compete with imported oil in all uses, the larger the fraction of U.S. energy demands that are met with domestic supplies, the less will be the demand pressure on world oil prices and the more restrained they are apt to be. This principle also applies to price-induced conservation. A million cubic feet (MCF) of natural gas, or a barrel of oil, or a kilowatt hour of electricity, which is conserved by one user and therefore available for use by another, ultimately displaces imported oil. In each case, the particulars may vary and the immediate effect is not necessarily a one-for-one transposition. In general, however, the average mix of energy displaced by price-induced conservation will be heavily weighted toward imported oil. Thus rationalization of U.S. energy markets to increase domestic supplies and encourage efficient use has a two-edged effect on U.S. oil vulnerability and the world price of oil.

Fourth, in historical perspective, the current world price of oil and the product prices that derive from it are not unusually high. If we again use gasoline as the standard of comparison, the current real price of regular-grade gasoline at the pump is approximately equal to the real price per gallon in 1929.[5] This suggests, again in historical terms, that the United States and the world are not entering an era of unusually high energy costs but leaving an era of unusually low energy costs. This perspective, together with the perspective that current and expected world oil prices are both the standard of social opportunity cost for increased U.S. energy consumption and the result of a rough competitive process, are important touchstones for evaluating the formulation of policy with respect to questions of prospective energy supply and demand and for appraising whether it is likely that energy costs will be a seriously limiting constraint on economic growth.

With regard to the latter appraisal, it is my opinion that the various doomsday scenarios that center on energy unavailability at unacceptable costs are seriously exaggerated. With regard to the former evaluation, it is my opinion that market forces and private initiatives are much more likely to generate the required energy availability at acceptable costs than interventionist strategies. Taking the U.S. policy world as we find it, less intervention is better than more intervention, and strategies that decrease the level of intervention dominate those that increase the level of intervention.

[5]In fact, if one explicitly adjusts for increases in gasoline excise taxes and implicitly adjusts for quality improvements, it is easily arguable that the current tax-free real price of gasoline is lower than in 1929.

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But these opinions and perspectives, particularly regarding the historical view of energy costs, must be put into context. This context has a simple name: Ghawar, the principal oil field of Saudi Arabia.[6] The occurrence of mineral deposits in nature tends to follow approximately what statisticians call a lognormal distribution, which differs from a standard normal distribution in a particular way: In a standard normal distribution, the average is also the representative value and deviations from the average are distributed around it – both above and below – in a symmetrical way, but in a lognormal distribution there are a few very large observations and many relatively smaller observations. The distribution is thus unsymmetrical and the representative, or typical, observation is much smaller than the statistical average – which reflects the disproportionate weight of the few very large observations. (In fact, the distribution is only made symmetrical by translating the raw observations into the logarithms of themselves; hence the name lognormal distribution.)

Ghawar is the dominant brute fact in the lognormal size distribution of the world's known oil fields. A measure of this dominance can be understood by recognizing that Saudi Arabia – and principally Ghawar – accounts for 25 percent of the proven world crude oil reserves. Moreover, many believe that were it motivated to do so Saudi Arabia could substantially increase its productive capacity above the current 10 million barrels per day by a program of relatively low-risk exploratory and developmental drilling – perhaps to 15 to 20 million barrels per day. Therefore the 25 percent of world-proven reserves accounted for in Saudi Arabia by Ghawar and the lesser fields is apt to be an underestimate of the prominence of the Saudi crude oil potential in the distribution of the world oil resource base.

Oil was discovered in Saudi Arabia in the 1930s, but Saudi oil production did not begin to be a significant factor in the world energy supply and demand balance until after World War II. Initially, in terms of production statistics, the output of Ghawar was indistinguishable from the output of the other large oil fields in the Middle East – and all were increasing output at prodigious rates. But gradually the lesser fields, although all giants in their own right, fell by the wayside, and Ghawar emerged preeminent.

The unusually low energy costs that we experienced in the period

[6] This context is global. Were the context limited to the United States of a particular era, its name would be East Texas. But the force of the principle would be the same, although its details would differ.

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from the end of World War II through the early 1970s were determined by the accommodation of the world energy supply and demand balance to the integration of the Middle East crude oil resources—and especially Ghawar—into the equation. As observed earlier, that integration is now complete, although many of our policies and perceptions are still conditioned by that experience. To this we will shortly turn. As a final matter of background, however, it is appropriate to speculate concerning prospective conditioning factors for the development of energy markets.

Driven by Ghawar and the Middle East, we have recently enjoyed several decades of unusually low energy costs. In the 1970s, although nominal dollar world oil prices rose sharply, the real prices of refined products such as gasoline now approximate levels circa 1929 and are, therefore, not unusually high in historical terms. This does not mean that the transition to a new market balance has been smooth and easy, but neither has it been a calamity. And the new market balance will principally differ from the old in matters of degree rather than kind. Oil will still be the fuel to beat. The market-tested triangle of oil, coal, and natural gas will overwhelmingly dominate world energy usage for the balance of this century and well into the next. The great, blind, groping, callous, but unmalevolent simultaneous equation system that determines prices, quantities, and market shares for these three fossil fuel contenders will continue to perform the iterations that spell success or failure and ease or hardship for this or that market participant.

The fundamental circularity of simultaneous systems befogs the question of whether coal and natural gas will set the ceiling that oil cannot exceed, or whether oil will set the target to which coal and natural gas can rise.[7]

The lessons inherent in this perspective are, I think, clear. There are limits beyond which the price of oil cannot rise on a sustained basis. Those limits are set by the alternative costs of competing fuels and the interaction of total energy supplies with demands that reflect the full effects of price-induced conservation. Attempts to cushion consumers from the full opportunity costs of their use of energy are apt to distort consumption and production patterns in ways that do more harm than good.

In historical terms, current and prospective world energy prices

[7]However one thinks of the target/ceiling problem, of course, the wellhead and minemouth prices of natural gas and coal must be net of transportation, storage, handling, and environmental costs and benefits.

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are not unusually high and are not inconsistent with major advances in the well-being of mankind. Nevertheless, the world energy economy has recently been through a shock. That shock, from the long view, was less the popular trauma of the 1970s and more the insidious seduction associated with the integration of Ghawar into international commerce. That integration is now complete, although its progress was accompanied by various episodic policy responses such as mandatory oil import quotas and market demand prorationing in the United States.[8] There is, however, one major U.S. primary energy policy problem remaining from this era: the question of natural gas pricing.

U.S. Natural Gas Pricing Policy: An Unrealized Opportunity

For natural gas, the interventionist hand is very visible. The Supreme Court ruled in the *Phillips* decision in 1954 that the Natural Gas Act of 1938 applied to the wellhead prices of natural gas sold in field markets by producers in addition to applying to interstate pipeline transmission company tariffs. Since then, a regime of wellhead ceiling price controls for natural gas sold in interstate commerce has been in place. The litigation involved in the struggles of the Federal Power Commission (FPC) to come to grips with the responsibility of formulating and administering a scheme of regulation to apply to the thousands of gas producers and tens of thousands of contracts for the production and sale of natural gas in interstate commerce is part of the arcane lore and tradition of U.S. energy policy.

In addition, since the time of the *Phillips* decision, a number of attempts have been made in Congress to remove ceiling price controls from the wellhead price of natural gas, but so far none have succeeded, including the Natural Gas Policy Act of 1978 (NGPA). The NGPA is actually a more byzantine set of ceiling price controls than the obsolescent FPC system it replaced. Further, it is a serious misnomer to call the NGPA a deregulation bill. To understand the origins and regulatory reach of the NGPA, and the potential mischief it may do, one must understand the historical relation between the interstate and intrastate markets.

At the same time that wellhead ceiling price controls applied to

[8]These and other policy questions are addressed in considerable detail in Craufurd D. Goodwin, ed., *Energy Policy in Perspective* (Washington: Brookings Institution, 1981). With the exception of Neil DeMarchi's sparkling chapters, this is a somewhat uneven book that suffers from a "who-was-on-first" point of view rather than a "what-was-the-game-all-about" perspective.

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sales on natural gas in the interstate market, there existed side-by-side with the interstate market a set of unregulated intrastate markets. Gas produced and consumed in the same state (i.e., intrastate) was generally not subject to FPC wellhead ceiling price controls. For years the regulated interstate ceiling prices acted as a *de facto* cap on unregulated natural gas sales in the intrastate markets. Industrial growth in the intrastate markets increased the demand for natural gas in the producing states, and in the late 1960s some sales of natural gas in the intrastate markets were made at wellhead prices in excess of the interstate market ceiling prices. In the early 1970s the interstate market ceiling prices became more and more out-of-date, and as demand for natural gas continued to increase in the intrastate markets, wellhead prices in the intrastate markets broke sharply away from the FPC interstate market ceiling prices.

Supplies increased in the intrastate markets, and the natural gas markets in the producing states were clearing at price levels for new gas supplies that exceeded interstate ceiling prices by more than one dollar per MCF. At the same time, it had become clear that the interstate market was not clearing at the FPC ceiling prices, production was exceeding reserve additions, and a shortage of natural gas in the interstate market had been created. The combination of new intrastate supplies and price-induced conservation, particularly in the intrastate industrial sector, resulted in an intrastate productive capacity that exceeded intrastate demand. This was in stark contrast to the interstate market in which deep curtailments were being experienced. Thus we had on the one hand a set of unregulated intrastate markets that were working smoothly and a regulated interstate market in which shortages, queues, end-use controls, curtailments, and hook-up moratoria were endemic. The maxim that second to bombing, the best way to destroy a city is rent controls was being illustrated by ceiling price controls on interstate natural gas.

One FPC response to this problem was to begin to revise upward the interstate ceiling prices, but the initial price adjustment responses were too tentative and timid to provide a solution. A second avenue of regulatory response initiated by the FPC was to create certain categories of emergency sales through which intrastate gas could temporarily flow into the interstate market, but various legal and jurisdictional questions, together with the fact that emergency sales did not directly address the underlying question of regulation-induced shortage, made emergency sales an inadequate procedure.

At the same time, a series of legislative initiatives in Congress

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began again to address the question of whether ceiling price controls in the interstate natural gas market were in the broad public interest. In 1976 deregulation legislation passed in the Senate but failed by two votes in the House. That left the ball in the regulatory arena. In 1976 in Opinions 770 and 770-A, the final general action by the FPC in establishing interstate ceiling prices at the wellhead for natural gas sales was to raise the price for new gas to approximate parity with the average new gas prices being paid in the intrastate markets.

The NGPA of 1978 built on the price adjustment initiatives taken by the FPC in Opinions 770 and 770-A. In addition, the NGPA imposed a framework that removed many of the ambiguities about interstate market access to the temporary surplus of natural gas in the intrastate markets. In his 1976 campaign for the presidency, Jimmy Carter proposed to work with the Congress to achieve deregulation of the price of natural gas, but his legislative proposals in 1977 did not reflect this proposal and instead extended ceiling price regulation to the intrastate markets.

This extension solved many of the legal and jurisdictional issues that had plagued the old emergency sales procedures. The shortages in the interstate market were temporarily ameliorated by the NGPA as a result of giving interstate pipelines access to new reserves and existing productive capacity in the intrastate markets at prices that had allowed the intrastate markets to clear. But the NGPA has not solved the larger and longer-run problem of inadequate U.S. natural gas reserve additions.

In round numbers, total natural gas production in the United States has been about 20 trillion cubic feet (TCF) per year in recent years. This has been divided approximately 60/40 between interstate and intrastate sales, with interstate sales of about 12 TCF per year and intrastate sales of about 8 TCF per year. In addition to being about 50 percent larger than the intrastate markets, the legacy of ceiling price controls and regulated contract provisions meant that the interstate market was much further out of equilibrium than the intrastate markets. Thus it is not surprising that replicating the intrastate markets' price adjustments in the interstate market —which is a principal, approximate effect of the NGPA—has been insufficient to allow the larger, more disequilibrated, interstate market to clear. In addition, because the two markets are now together within the framework of the NGPA, there is a possibility that future natural gas shortages may be disproportionately shared by the previously well-functioning, historically unregulated intrastate markets.

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The United States has recently been producing and consuming about 20 TCF of natural gas a year while adding only about 10 to 15 TCF per year to reserves. This ultimately untenable relationship has been the focus of the regulation-induced shortage. Since 1970 production has exceeded reserve additions every year. In effect, we have been living on our inventories. In fact, the U.S. inventory of proved reserves has fallen from about 290 TCF at the beginning of the 1970s to about 190 TCF at the close of the decade. Obviously this trend cannot continue indefinitely. Either reserve additions must soon be brought up to parity with production, or production and consumption will be inexorably constrained by reserve additions.

The current "bubble" of natural gas deliverability does not make this prospect less sobering. One can think of natural gas production, development, and exploration as rather like a supermarket. Production is analogous to consumers taking goods off the shelves; development is moving goods from the stockroom to the shelves; and exploration is the arrival of new delivery trucks. The current deliverability bubble is the equivalent of putting stock clerks on roller skates so that inventories can be moved more rapidly from the stockroom to the shelves. But not enough trucks are arriving at the loading dock to keep the stockroom from becoming increasingly bare. This is the longer-run shortage of reserves additions for which the NGPA is an insufficient remedy.

There is no fundamental geological reason why the balance between current production and reserve additions cannot be restored at a level that permits domestic conventional natural gas to continue to make at least its present contribution to the overall U.S. energy supply and demand balance. Natural gas now accounts for over 25 percent of total U.S. energy consumption and is the largest single domestic source of primary energy production with nearly 40 percent of U.S. production (after excluding oil imports). Estimates of the undiscovered resource base are very large. Drilling and drilling capacity respond positively and significantly to economic incentives. Private geophysical estimates are that less than 5 percent of the potential gas- and oil-bearing sedimentary deposits in the United States have been tested by the drill bit.[9]

In response to crude oil price decontrol, over 3,800 drilling rigs were active in the summer of 1981, a 100 percent increase relative

[9]See for example the testimony of Dr. Harry C. Kent, Director of the Potential Gas Agency, Colorado School of Mines, before the Subcommittee on Fossil and Synthetic Fuels of the Committee on Energy and Commerce, United States House of Representatives, June 9, 1981; United States Department of the Interior Geological

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to the average rig count in 1977. New records for rig activity are being set nearly every week. The industry is adding rigs at a rate in excess of 2.5 per day, or nearly 1,000 per year, but this current surge in drilling is in response to higher economic incentives for domestic oil production and is not now spilling over into gas well drilling. Less than 20 percent of U.S. natural gas production comes from oil wells. The vast majority of gas production comes from gas wells intentionally drilled as gas wells, so an increase in oil well drilling will not solve our gas supply problems.

There is, however, a particular area of exploration for domestic natural gas where activity has been increasing and which simultaneously illustrates responsiveness to economic incentives, the potential of the natural gas resource base, and the problems of the NGPA. This is deep gas. Deep gas from gas wells completed below 15,000 feet is deregulated under the NGPA. The cost of drilling is an exponential function of depth, but there is no magic in an arbitrary line at 15,000 feet. Deep wells now account for about 1 percent of total gas production. Because so much of the demand pressure for new reserve additions is concentrated on this tiny sliver of deregulated supply, and because prices paid for deep gas are "rolled-in" with low-priced gas under price controls, pipelines can bid very high prices for deep gas and still remain competitive with alternative fuels at the burner-tip with the weighted average cost of their mix of gas supply. As a result, some of the wellhead prices being paid for some deep gas are in the range of $6 to $8 per MCF.

Not surprisingly, drilling targeted at high-cost deep gas has been increasing rapidly, although it is still a very small fraction of total drilling activity, and very impressive deep gas finds are being made.

The problem with the NGPA that this good news illustrates is very straightforward. In July of 1981 the "incentive" ceiling prices for ordinary new gas supplies ranged from $2.45 to $2.85 per MCF. The average gas well is 5,000 feet deep. It defies geologic and economic logic and commonsense not to believe that there are substantial new natural gas supplies that lie between 5,000 and 15,000 feet and would be cost-effective at prices above current NGPA ceiling prices but well below prices now being paid for deep gas.

If deep gas had to compete with increased supplies of medium-depth gas, deep gas would not now command the pathological

Survey, *Estimates of Undiscovered Recoverable Resources of Conventionally Producible Oil and Gas in the United States,* Open File Report 81-192; Pitts Energy Group, map of untested potential sedimentary deposits in the United States, 1977.

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prices being generated by hothouse economics. The NGPA in effect creates a self-imposed embargo on access to many geological prospects that are less than 15,000 feet and would be cost-effective at deregulated prices. As a result of the regulatory distortion of market prices for deep gas, society will expend a greater level of resources to achieve any given level of gas supply than would be the case under a more universal price-deregulation strategy.

In addition to deregulating deep gas, the final version of the NGPA enacted by Congress contained provisions for deregulation of certain other categories of gas in 1985 but prolonged ceiling price controls until that time. The categories of gas to be deregulated in 1985 include some, but by no means all, of the new gas discovered and developed under the NGPA and some gas flowing in intrastate commerce prior to the passage of the NGPA. According to various estimates, somewhere between 40 and 60 percent of gas production will be deregulated *if* the deregulation provisions of the NGPA are allowed to operate as scheduled on January 1, 1985. In addition, after a six-month hiatus, controls may be reimposed by the president for a subsequent eighteen-month period. Thus in terms of both the magnitude of gas production remaining under ceiling price controls and uncertainty concerning the operation of those deregulation provisions contained in the NGPA, the popular conception of the NGPA as a deregulation mechanism is inappropriate.

The ceiling price regime for new gas contained in the NGPA was pegged to a projection of world oil prices of $15 per barrel in 1985 (in 1977 dollars). This projection has proved to be far too low, and is an impediment to the operation of those partial deregulation provisions that do exist in the NGPA. The actual prices for new natural gas established under the NGPA can best be viewed as a continuation of the regulated ceiling price trajectory established by the FPC in Opinions 770 and 770-A. Courageous and admirable though Opinions 770 and 770-A were, they were essentially a regulatory attempt to play catch-up ball with the intrastate prices for new gas in the mid-1970s. In terms of world oil prices, the energy market circumstances of the 1980s are not those of the mid-1970s. The 1980s are a new ballgame.

Deregulation of wellhead prices for natural gas, however, is the appropriate strategy to bring new discoveries into balance with production. New discoveries of natural gas can be made only as a result of drilling wells. The record of the 1970s has several broad lessons for us to consider. First, as is indicated in table 1, successful gas completions respond to higher economic incentives. Second, although the increase in economic incentives that occurred during

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TABLE 1

SOME PERSPECTIVE ON DRILLING

Year	Successful Gas Completions	Annual Increase	Comment
1970	3,840		
1971	3,830	– 0.3%	Intrastate prices break away
1972	4,928	+28.7	from FPC ceiling prices
1973	6,385	+29.6	
1974	7,240	+13.4	Intrastate market clears
1975	7,580	+ 4.7	
1976	9,085	+19.9	Opinions 770 and 770-A spur
1977	11,378	+25.2	total drilling
1978	13,064	+14.8	
1979	14,681	+12.3	Movement toward market-
1980	15,730	+ 7.1	clearing prices moderated by NGPA

the 1970s was sufficient to arrest the downward trend in reserve additions that began in the late 1960s, it has not been sufficient to create reserve additions equal to the rate of production. The result has been continued year-to-year declines in the level of proved reserves.

Under the NGPA, year-to-year percentage increases in gas well completions have been steadily winding down. The first quarter of 1981 is actually down 5 percent from the first quarter of 1980. To be sure, these most recent gas well drilling data reflect a short-run oil tilt in the allocation of drilling effort, but the longer-run trend was clearly apparent prior to the decontrol of crude oil prices.

Finally, the Natural Gas Policy Act of 1978, titanic legislative struggle though it was, can best be viewed as a congressional ratification and extension of the policies established in 1976 by the FPC in Opinions 770 and 770-A. The record of year-to-year declines in the percentage increases of successful gas completions displayed in table 1 indicates that the movement toward national market-clearing prices for natural gas has begun to moderate under the NGPA. It is unlikely that the market will clear under the NGPA.

Conclusions

U.S. energy policy in the twenty-five years after World War II was driven by the responses required to accommodate the integration of Ghawar and the other large oil fields in the Middle East into

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the world energy supply and demand network. Although there was no overarching rationalization in terms of a "national energy plan," there was a visible hand of piecemeal intervention. By the early 1970s the Middle East was integrated into the system, and the stopgap U.S. policies of mandatory oil import quotas and market demand prorationing were no longer necessary and became defunct. The 1970s, then, became a period of searching for a new, now explicit, rationale for U.S. energy policy. Despite the best efforts of our political leadership, we muddled through the 1970s and may now be moving toward a consensus. The linchpin of that consensus is the recognition that the world price of oil is a fact of life, our domestic production and conservation decisions should be geared to that fact of life, and the costs and risks of our participation in the world oil market can be reduced by acting accordingly.

Thus in the past decade we have dealt with our energy policy problems in an incomplete and unsatisfactory way. It is true that substantive progress has been made, in that we see more clearly the nature of the required solutions. But much of the same agenda with which we entered the 1970s remains before us. Our energy policy problems are real problems. New supplies cannot be cheaply and instantaneously created. The transition to efficient energy markets that rely on market-clearing prices, competitive allocation, and price-induced conservation to achieve the best and highest-valued uses will not be painless. Nowhere in the regulatory arena is the immediate potential for benefit from reform greater and more apparent than for natural gas.

The Natural Gas Policy Act of 1978 can best be viewed as a way station on the journey to a future resolution of the national energy policy issues involved in the pricing of natural gas at the wellhead. In addition, how we deal with the NGPA will be an indication of how we intend to deal with the future organization of the economy in general. The NGPA extended ceiling price controls to previously unregulated intrastate markets and prolonged them for the interstate market. Interstate market ceiling price controls that were too inflexible to respond quickly and properly to energy market realities were the cause of the natural gas shortages of the 1970s and have now been extended to the total gas market. There is no longer an unregulated market indicator of sufficient size to provide an alternative standard of comparison to regulated results.

Nevertheless, in terms of simple price adjustments alone, the decade of the 1970s saw substantial movement for natural gas in the direction required for a rational national energy policy. Now a perception is growing that deregulation of wellhead markets for

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natural gas is necessary and desirable. There is another dimension as well: finding the political will required to end the self-imposed restrictions that encumber the operation of the process and inhibit us from addressing the fundamental questions. In this regard we now stand on the threshold of new initiatives. With what should we replace the visible hand of activist intervention? May I suggest the translucent hand that restrains our tendencies to intervene.

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Communications

THE CONSUMPTION TAX AND SUPPLY-SIDE ECONOMICS: Some Short-Term Revenue Effects

It is well known that supply-side marginal tax rate cuts have an ambiguous effect on government tax revenue.[1] Opponents of supply-side economics usually argue against such tax cuts on the basis of one or more of the following assertions:[2]

1. The Laffer effect is a long-term effect: In the short term, tax rate cuts will universally reduce government revenue;
2. The United States is not currently in the prohibitive zone of the Laffer curve;
3. Tax rate cuts will lead to revenue increases only if people save more of their income (i.e., do not spend it).[3]

In this paper we present a logical extension of the Laffer model that casts doubt on the above criticisms of supply-side economics. In particular, we show that (1) because of "dual taxations," Reagan's tax rate cuts will *unambiguously* lead to immediate (short-term) increases in government revenue; (2) the prohibitive zone is larger than Laffer originally hypothesized, thus increasing the probability that the United States is currently in the prohibitive zone; (3) the greater the tendency for people not to save because of the tax rate cuts, the *greater* the immediate increases in tax revenue.

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[1] Arthur B. Laffer, "Government Exactions and Revenue Deficiencies," *Cato Journal* 1, no. 1 (Spring 1981): 1-21.

[2] For further development of these arguments, see David Henderson, "Limitations of the Laffer Curve as a Justification for Tax Cuts," *Cato Journal* 1, no. 1 (Spring 1981): 45-52.

[3] This belief is so widespread that it has been naively popularized as an economic truism. For example, see the commentary by Lewis Beman, "What Supply-Siders Hope to Achieve," *Business Week*, November 17, 1980, p. 158.

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To formalize the model above, we will use the following simplification of the present tax structure in the United States. Both income and consumption are taxed. Real income, Q, is taxed at a marginal tax rate, t. Under the standard assumptions of Laffer we have $Q = Q(t)$, where $Q'(t) < O$ and $Q''(t) < O$. Thus government revenue from the income tax is given by

$$R_I \equiv t \cdot Q(t), \tag{1}$$

where $R_I(O) \equiv R_I(1) \equiv O$. This is the basic formulation of the supply-siders.

We add to the existing theory another major source of government revenue: consumption tax revenue, which includes government income from state and local sales taxes, federal excise taxes, property taxes, tariffs, permits, etc. For simplicity, we denote all such consumption goods C, and assume they are taxed at the same rate, T. It is reasonable to assume that consumption directly depends on real income, which in turn is inversely dependent on the marginal tax rate. Thus we have $C = C(t)$, where $C'(t) < O$ and $C''(t) < O$. Government revenue from consumption taxes are thus

$$R_C \equiv T \cdot C(t). \tag{2}$$

Adding (1) and (2) we obtain *total* government revenue:

$$R^* = t \cdot Q(t) + T \cdot C(t). \tag{3}$$

The revenue effects of a change in the personal income tax rate, t, are found by differentiating (3) with respect to t. Evidently,

$$\frac{dR^*}{dt} = \underbrace{t \cdot Q'(t) + Q(t)}_{\text{Output Effect}} + \underbrace{T \cdot C'(t)}_{\text{Consumption Effect}} \tag{4}$$

The output effect is nothing more than the classic effect emphasized by Laffer, which is known to be ambiguous. However, the consumption effect is unambiguously negative, which means that the output effect always underestimates the government's revenue gain from a reduction in personal income tax rates.

Figure 1 depicts the preceding results. In Panel A a typical Laffer curve is seen in which income tax revenue (R_I) is graphed against the marginal tax rate (t). The slope of the curve represents the output effect of equation (4). In Panel B the consumption tax revenue (R_C) schedule is graphed. The slope of the curve is the consumption effect of equation (4). The curve in Panel B must be added to that in Panel A in order to obtain *total* government tax revenue (R^*) as a function of t. Such a curve is presented in Panel C. Thus the tax rate t_o maximizes income tax revenue but *does not* maximize total tax

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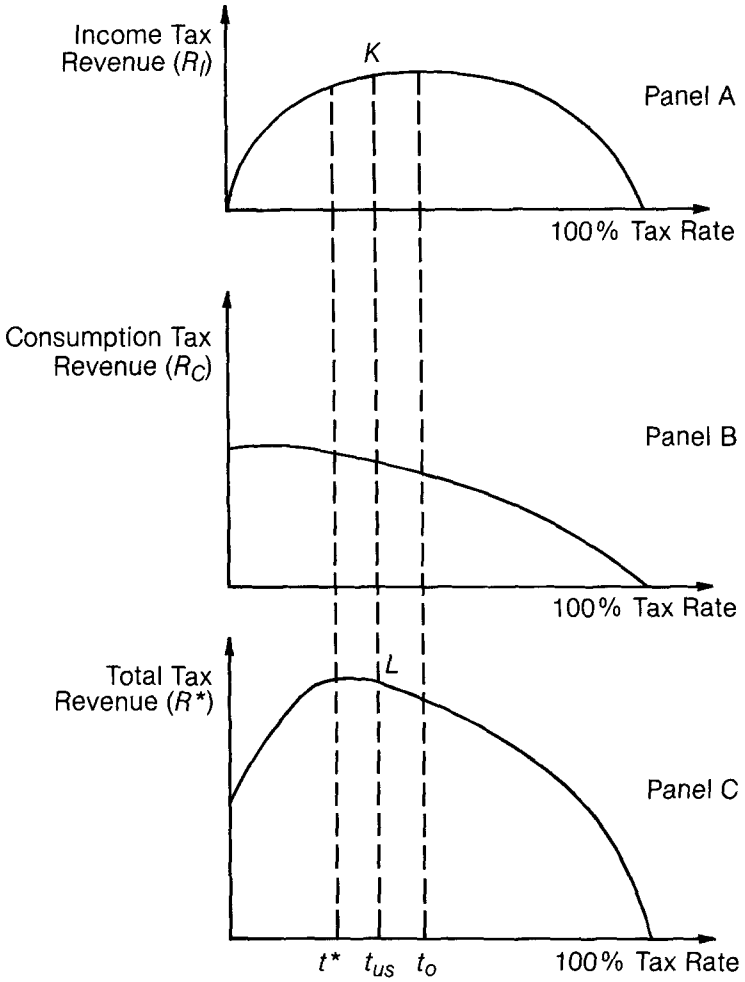
FIGURE 1



revenue. In fact, for a given tax rate on consumption, a lower income tax rate of t^* is seen to be the optimal revenue generating marginal tax rate. Even if the personal income tax rate in the United States is not in the prohibitive zone of the "ordinary" Laffer curve (point K in Panel A), it may well be in the prohibitive zone when consumption tax revenue is included (point L in Panel C).

The intuitive bases of these results are worth explication. As personal income tax rates are reduced, output increases. Depending on the tax elasticity of output, government revenue may rise or fall as

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a result.[4] As output increases (or as income accumulates in the hands of the public), consumption tends to increase. If tariffs, sales tax rates, excise tax rates, etc., are held constant, then the government's consumption tax revenues will increase. Moreover, as is readily seen in figure 1, the "optimal" revenue-generating marginal tax rate for a given T is actually *less* than that proposed by Laffer and others.

In closing we feel compelled to emphasize that the consumption effect seen in equation (4) is a robust example of the potential demand-side government revenue benefits from supply-side economics. In particular, state and local governments that depend on sales taxes will receive unambiguous increases in tax revenue should the Reagan tax cuts become law. These increases will be an immediate side effect of increases in private consumption. Thus even those cuts within the range where federal tax revenues diminish may produce immediate increases in *aggregate* government revenues (combined state, local, and federal revenues).

The consumption effect *must* be considered in discussions of tax cuts. The result that the immediate benefits accrue primarily to the state and local coffers rather than the federal treasury is not a significant problem. With tax rates chosen to maximize aggregate government revenue, policy decisions involving intragovernmental transfers of either power or funding are of a political nature and not of direct concern to us as economists. We, at least, gladly leave such problems for the political philosophers.

Michael R. Baye
Darrell F. Parker
Department of Economics, Purdue University,
West Lafayette, Indiana 47907.

[4]There appears to be a consensus even among supply-siders that this effect may be longer-term. See for example Laffer, "Government Exactions," p. 21.

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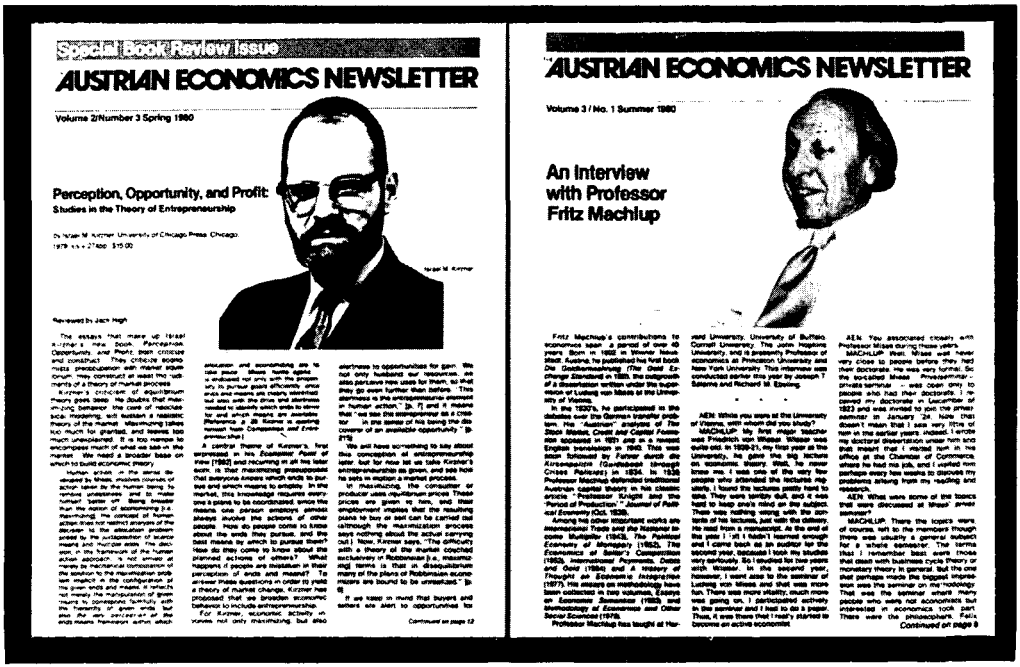
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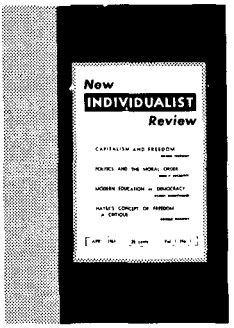

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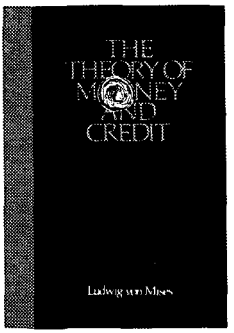

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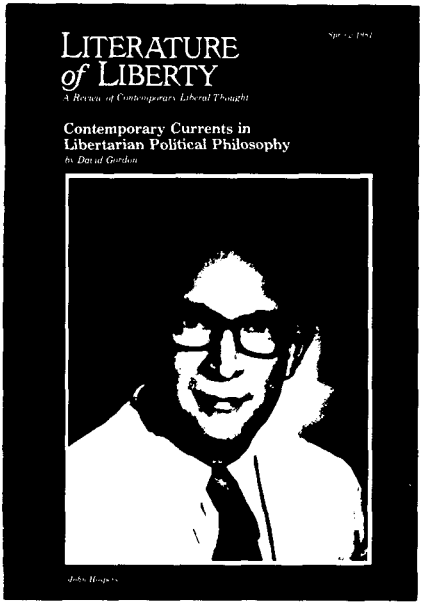

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FAITH WITH A RATIONAL BASIS

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—Thomas S. Kuhn

from *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962), pp. 157–58.

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